A COMPARISON OF THE UNITED STATES AND EUROPEAN POLICIES FOR THE DEVELOPMENT OF THE *U.S. INFORMATION SUPERHIGHWAY* AND THE *EUROPEAN INFORMATION SOCIETY*

By

WILLIAM JOHNSTONE

DISSERTATION PRESENTED TO THE GRADUATE SCHOOL
OF THE UNIVERSITY OF FLORIDA IN PARTIAL FULFILLMENT OF THE
REQUIREMENTS FOR THE DEGREE OF DOCTOR OF PHILOSOPHY

UNIVERSITY OF FLORIDA

1996

ACKNOWLEDGMENTS

Many thanks to Cable & Wireless without whose financial support this research would not have been possible.

TABLE OF CONTENTS

page

ACKNOWLEDGMENTS ii

LIST OF TABLES v

ABSTRACT vi

CHAPTERS

1 BACKGROUND 1
- Statement of The Problem 1
- The Dissertation Chapters 2
- Method Adopted to Analyze U.S. Telecommunications Policy 4
- Method Adopted to Analyze European Telecommunications Policy 6
- International Telecommunications 8
- International Accounting Rate and U.S. Trade Deficit 21
- The Anomalies of U.S. Telecommunications Foreign Policy 25
- The Internet and the Global Perspective 27
- Out of the Public Sphere 33
- The New Internet 36

2 EUROPE'S COMMITMENT TO ITS INFORMATION SOCIETY 44
- Postwar Europe 46
- Moves Towards a new Europe 49
- An Evolving Europe in Telecommunications 55
- The Forces of Law 60
- A European Frontier Tax 66
- A New European Perspective 70
- Internet in Europe 80
- Europe's Goals 81

3 THE U.S. COMMITMENT TO ITS INFORMATION SUPERHIGHWAY 90
- Political Commitment 91
- Political Promise 96
- The 'Haves' and the 'Have-nots' 98
- Financial Support Infrastructure 101
- The Merger Phenomenon 104

Consensus Strategy........109
Accompanying Problems........111
The Definitive Step........119

4 THE U.S. AND EUROPEAN DEVELOPMENT OF THEIR INFORMATION ECONOMIES........127
Europe........127
The U.S........147

5 SUMMARY AND CONCLUSIONS........171
Research Findings........174
Comparison of early American and European Policy........177
International Dimension........178
The Internet........180
Comparison of the New Telecommunications Climate in U.S. and Europe........183
Earlier Attempts........183
New U.S. Legislation and the European Response........184
Future Areas of Research........193
Summary........196

APPENDIX........203

BIBLIOGRAPHY........206

BIOGRAPHICAL SKETCH........223

LIST OF TABLES

table page

1-1 Economics Of Transatlantic Cable Systems 1956-92 16

1-2 Net Settlement Payments To Top Twelve Countries 1985-90 22

3-1 Sample Mergers and their Purpose 107

4-1 Sample of RBOC Overseas Investments 143

4-2 Examples of Multimedia Mergers 146

4-3 Top European Carriers in Relation to U.S. Equivalents 146

4-4 Regional Holding Companies (RBOC) and Local Bell Telephone Companies 149

5-1 Comparison of U.S. and European Telecommunications Policies and Models 198

Abstract of Dissertation Presented to the Graduate School of the University of Florida in partial Fulfillment of the Requirements for the Degree of Doctor of Philosophy

A COMPARISON OF THE UNITED STATES AND EUROPEAN POLICIES FOR THE DEVELOPMENT OF THE *U.S. INFORMATION SUPERHIGHWAY* AND THE *EUROPEAN INFORMATION SOCIETY*

By

William Johnstone

May, 1996

Chairman: Dr. David Ostroff
Major Department: Journalism and Communications

The dissertation examines the domestic policies which, respectively, were pursued by the American and the European governments in the development of the infrastructures for the U.S. Information Superhighway and the European Information Society. The international climate of telecommunications was examined as was the political anguish experienced by the United States which sought to reduce a U.S.$4 billion annual trade imbalance in telecommunications traffic. Also examined are the relationships which the relevant agencies of the United States developed with foreign governments and the international bodies responsible for coordinating international telecommunications. Analyzed are the conditions which led and surrounded the divestiture of AT&T in 1982, its breakup in 1984 and the creation of the seven Regional Bell Operating Companies (RBOCs) which controlled the local telephone networks. The conditions imposed on the

RBOCs, Consent Decree, are discussed and how the companies sought to free themselves from the restrictions imposed on them--information services, long distance, manufacturing and non-telephone business. Also discussed is the political climate which developed some ten years after the divestiture which sought to free the RBOCs from the restrictions of the Consent Decree and transform the U.S. into the most competitively driven telecommunications market in the world. Cable television was the subject of two pieces of legislation discussed in the research. The first Cable Act 1984 deregulated cable and effectively created a fiefdom of monopoly franchises. The second, in 1992, attempted to curb the industry from rate abuses. The success of the Internet inspired thinking in international multimedia network terms. A new political climate resulted in the passage of telecommunications legislation at the beginning of February 1996. The telephone industry-long distance and local--and that of cable television would all be open to competition. That was a significant step in creating the *U.S. Information Superhighway*, as discussed.

In Europe, the European Economic Commission (EEC) sought to free its telecommunications from the control of the government agencies--Postal, Telephone and Telegraph (PTTs). The Commission published its Green Paper on telecommunications in 1987 which set the political agenda for competition in European telecommunications. The privatization of British Telecom, in 1984, gave impetus to the Commission's policies. The policies adopted to create the infrastructure for Europe's *Information Society* are examined and, where relevant, compared to the U.S. approach.

CHAPTER 1

BACKGROUND

Statement of the Problem

The priorities contained in telecommunications policies, until now, have been dictated by domestic needs. Only recently has the international dimension begun to become a crucial element. The mass communications industries, across the developed world, are being forced to change--a genesis driven by commerce, technology, political ideology, global trade, foreign policy and a mixture of all.

The success of the Internet proved that even with the constraints of political and geographical frontiers, which have prevented the growth of low cost multimedia networks, such international links are possible. The Internet has also challenged the very nature of pricing and the power of inflexible telecommunications operators. It is an international multimedia network devoid of nationalism. Above all, it has inspired those who are developing national multimedia policies to think in international terms.

Both the United States and Europe are evolving domestic policies for the infrastructures which will support information based economies. Such strategies must clearly define the role to be played by telecommunications. The expansion and exploitation of cable and telephone, the two principal industries in that sector, are crucial to the success of those plans. An examination of the measures adopted to develop these areas gives an insight into the European and American perspectives and priorities. For without that comprehension, the European and American policies may never have common ground--a must if they are to become elements of a global policy. This study seeks to examine those areas and related issues. The study is limited to telephony and cable television. The other major areas--broadcasting, satellite and cellular--will not be examined in this research.

The Dissertation Chapters

The world of international telecommunications has long been fraught with conflict and division. Not unexpectedly, countries seeking to protect their interests have resisted change which might undermine their domestic policies and economies. The developing world, the United States and, until recently, Europe have had diverse approaches to telecommunications.

The United States, in particular, has had varied experience in international telecommunications. Its ambitions have been thwarted by what it considered to be intransigent foreign governments and their vested interests. The U.S. has been the primary influence in trying to change international telecommunications policy, frustrated by those countries which do not share its priorities, and burdened with its trade deficit in telecommunications services.

The experience of the U.S. in international telecommunications bears witness to the politics of this arena where consensus has been a rare occurrence. Chapter 1 will document some of those U.S. experiences which resulted in direct conflict with the International Telecommunications Union (ITU), the agency of the United Nations governing telecommunications. These incidents and their significance will be discussed and examined in Chapter 1. Other factors which have influenced U.S. international telecommunications relations--International Accounting Rates and the U.S. trade deficit in telecommunication services, the anomalies in U.S. international telecommunications policy and the phenomenon of the Internet are also discussed.

Chapters 2 and 3, respectively, will map Europe's commitment to its *Information Society* and that of the United States to its *Information Superhighway*. Chapter 4 will examine and analyze the measures taken by the U.S. and Europe as they sought to move toward these political goals during the 1980s. In Chapter 5, the respective U.S. and European policies, perspectives and priorities will be examined and compared to identify the common ground which will be the crux of international telecommunications political consensus in the 1990s. Also, in Chapter 5, the new U.S. legislation of February 1996 will be briefly examined and compared to the anticipated European response.

Method Adopted to Analyze U.S. Telecommunications Policy

The diverse nature of the U.S. agencies influencing international telecommunications policy created major political problems for the U.S., evident in Congressional records, debates and agency exchanges. Agencies with different priorities were trying to implement conflicting policies. The relevant papers of the USTR, NTIA, FCC, Treasury, Department of State and Congress tell that story.

On the domestic front, America took a substantial step in the liberalizing of its telecommunications in 1982-84 with the breakup of American Telephone & Telegraph (AT&T) and the creation of the seven Regional Bell Operating Companies (RBOCs) which control the local telephone exchanges. That measure is documented in volumes of court, congressional and corporate records and is evidence of a dramatic change in telecommunications politics, involving AT&T, the Judiciary, the Department of Justice and the relevant government agencies.

In the wake of the divestiture of AT&T, the U.S. created one of the most complex regulatory structures in telecommunications--the Department of Justice, the State Utility Commissioners, the DC District Court (under Judge Harold Greene), the Supreme Court and the Federal Communications Commission (FCC). The U.S. system represented a mixture of checks and balances, despite its apparent chaotic mechanics. Congressional papers, academic analysis, statements by the RBOCs, private consultants and by regulators support that view.

Also, various pieces of unrelated legislation were instrumental in shaping the U.S. domestic regulatory framework. They consisted of

Sherman Antitrust Act 1890, Tunney Act 1974 (requiring judicial approval of a Consent Decree), Communications Act 1934 (empowering government agency in implementing Congressional telecommunications policy) and the commercial clause of the U.S. Constitution providing federal oversight of interstate commerce and other diverse statutes governing public utilities.

The exchanges between the regulators are a measure of the success, or not, of the regulatory structure. All have published their views, principally when there have been major differences of opinion. Such documents and analysis give an understanding of the political climate which now prevails in Congress, one determined to topple what it considers to be an unsatisfactory regulatory regime.

The behavior of the U.S. cable television industry has been documented by consumer groups, lobbyists, the television industry, Congress and the General Accounting Office (GAO). The industry has been the subject of two pieces of legislation. The debates surrounding the first legislation in 1984 were starkly different from those of the second in 1992 when the industry was under attack. Again, the relevant papers, articles, documents and statistics give an insight into the political climate which provoked change in this sector in 1996.

The research leads to the new U.S. telecommunications legislation, designed to change the contours of the telecommunications industry. The legislation, which will be briefly examined, determines that the market will be liberalized, the constraints imposed on the RBOCs at the divestiture of AT&T rescinded and competition introduced in every sector--telephone, local/ long distance, cable and the Internet.

In all chapters, the respective documents will be cited in full.

Method Adopted to Analyze European Telecommunications Policy

Europe was making changes in its telecommunications policies, albeit more cautiously. The debates which centered around the privatization of British Telecom, through the passage of legislation in 1984, highlight the issues. Premier Margaret Thatcher's ideology removed the corporation from the state sector, a long held political commitment to reverse state ownership, which she considered an icon of socialism. State owned (nationalized) companies were privatized. The gas and electricity utilities, British Airways, the steel and the coal industries were transferred to the private sector. Telecommunications was part of that package.

The sale of British Telecom had political fallout across Europe. It gave confidence to a European Commission to devise policies to bring the rest of Europe into line with its thinking in telecommunications. Europe has no unified regulatory authority, although the role of the European Commission (and its directorate responsible for information technology and trade) is a continental body which best fits that description. Its papers, debates, reports, statistics, directives and edicts provide information on the priorities of the continent. Exchanges between the Commission and the different telecommunications authorities (still owned by government--the PTTs--Postal, Telegraph and Telephone agencies) highlight the political, economic and social priorities of the Commission and the member states. They demonstrate the EEC's resolve to bring uniformity to the continent in telecommunications.

Europe has also attempted to 'liberate' its cable television industry. Again, Britain was at the fore. Although given political support in 1982 by the U.K. government, the British cable television industry was all but dead by the late 1980s. It was rejuvenated by cash injections from foreign companies, especially the American RBOCs. Academic papers, books, articles and corporate presentations to the EEC illustrate the diverse opinion and the commercial political caucuses which seek to create and exploit this potentially billion dollar industry.

The European Commission is determined to liberalize its telecommunications--telephony and cable--by 1998. These published strategies have been examined in this research.

In all chapters, the respective documents will be cited in full.

International Telecommunications

"One consequence of the world's slow but steady development toward a 'global village' is the ever increasing use of communications facilities linking the people of one country with the peoples of other countries. . . . I believe that our international communications sector should be the most efficient and innovative anywhere" Charles D. Ferris, Chairman FCC 1980 (1).

Diverse domestic policies, mixtures of public sphere and the private sector, have been pursued in Europe and America in the promotion of advanced telecommunications. They have met with mixed fortunes, some measurably successful in commercial terms while others unarguably have been disasters. The policies themselves are significant in that they define priorities.

Europe and the USA have ventured into both policy camps while defining domestic communications policy. If ever the constituency of such policies could be contained within national frontiers, those days are gone. The worlds of trade, commerce and industry are global. Advanced communications have become fundamental elements in trade itself.

These domestic policies are being translated into some form of "telecommunications foreign policy." As the USA and Europe push to make advanced global communications a reality, there are areas of this foreign policy which conflict. But there is common ground and it is around this that consensus international policies take shape. International communications and information policy is an increasingly important foreign policy priority which can advance the economic, political and national security interests of the United States. The U.S., in 1987, had maintained that telecommunications was not just a foreign policy issue, a domestic issue, a trade issue, a technology issue or an issue critical to national defense. But it was all of them (2).

The hybrid definition of telecommunications, above, highlighted the issues which would need to be addressed if a comprehensive policy on U.S. international telecommunications was to be explored. But the definition reflected the inconsistencies which have haunted the U.S. for nearly two decades.

Simply, in international telecommunications, the U.S. has been alone in a world where telecommunications has been controlled largely by government bureaucracies. Invariably, those agencies are inefficient arms of what once was their postal services. Much foreign currency, largely American, has been enjoyed by these government monopolies, determined to maintain the status quo.

For the U.S., it has been enormously frustrating. Having transformed its domestic market by dismantling the monopoly of AT&T (1982-4) and introducing competition in long distance, America sought to transfer that policy abroad (see Chapter 4).

More competition in the international arena would be the goal which would precipitate efficiencies, above all price reductions. But translating that into reality was a more difficult task than the U.S. had faced domestically. The world was not controllable and certain factions were hostile. Even internally, the U.S. was having problems coordinating its approach, another dimension of the U.S. frustration. Diverse interests within government were sources of much conflict but above all obstacles to the formation of any coherent international telecommunications strategy. "While the GATT has been a major force in reducing tariffs and opening markets, to date it has not addressed some of the major markets access problems in telecommunications. In almost all important markets, the State monopoly or State--authorized monopoly is the overwhelmingly dominant purchaser of equipment and the only service provider"(3).

The two Congressional reports of 1980 and 1983 addressed many of the same issues (4). The first, prepared for Congress in 1980 highlighted that plight, as the U.S. tried to take its first steps in the new information age.

> The U.S. Government is unprepared. It has developed neither comprehensive plans or policies nor a coherent strategy for responding to the policies of other nations which may damage U.S. interests. The U.S. Government does not have even the organizational structure to develop such policies, coordinate its actions, and effectively protect U.S. interests.(5)

The study further concluded that even if the existing structure had worked well, which it had not, a change was now vital if the country was to anticipate and respond to the rapid changes about to take place in international communications. Barriers would be erected by foreign vested interests and governments, the report added, which would thwart any anticipated U.S. growth in the international marketplace. "What these barriers--economic, social, cultural, political--portend for the United States is both a loss of the ability of American enterprises to compete fairly and effectively in vital world markets"(6).

The second investigation in 1983 showed that the U.S. was still grappling with the issues. It identified the diverse bodies which formulated, and appeared to influence, international policy on telecommunications.

Here was the dichotomy. Although the basic tenet of U.S. policy on international telecommunications was to place "maximum reliance on marketplace competition wherever possible" (7), the U.S. seemed incapable of achieving that end without a host of competing government agencies. The U.S. policy, as existed then, was a confusing amalgam of security, trade and industry.

The Senate report insisted that the major players which influenced international policy--the National Telecommunications and Information Administration (NTIA), the Department of State, the Federal Communications Commission and the United States Trade Representative (USTR)--coordinate their efforts. "While the argument is made that diversity and cross-fertilization yield strength, a review of international telecommunications policy making in the U.S. suggests that they also breed confusion, conflicts, jurisdictional disputes, lack of coordination, and lack of adequate preparation" (8).

In this report, particular criticism was reserved for the ITU, the major United Nations forum for developing and discussing international communications policy, created in 1932 by merging the International Telegraph Union and the signatories of the International Radio Telegraph Convention. The relationship between the agency and the U.S. had reached a low in 1982, due to an attempt to expel Israel. Such was the frustration then, that the NTIA recommended an alternative to the ITU (9), claiming the agency was not serving the interests of all its members (then some 160 member countries, developed and developing) (10).

But a U.S. withdrawal did not take place and, if it ever contemplated any credible alternative to the ITU, it was not to emerge. Instead the U.S. began, with its agencies devoted to international telecommunications, to coordinate its efforts. To ensure that the U.S. foreign profile had one shape the Bureau of International Communications and Information Policy was created in 1985 to coordinate international telecommunications strategy.

The U.S. embarked on a program of international diplomacy to influence senior political opinion in targeted countries and engage in bilateral discussions with decision--makers "Beyond the traditionally parochial interests of the PTTs" (11).

An intelligence network was created with key foreign service outposts--London; Paris; Bonn; Rome; Ottawa; European Community (EC), Brussels; Organization for Economic Cooperation and Development (OECD), Paris, Geneva; United Nations (UN), Geneva; Tokyo; Beijing; New Delhi; Nairobi; Mexico City and Brasilia (12).

These attaches were groomed in U.S. goals and were encouraged to gather intelligence and to feed back, first hand, information to the State Department. "These officers not only went back to their posts with an expanded knowledge of the issues, activities and U.S. goals, but they also contributed their own perspectives on dealing with the various players and issues in host countries"(13).

Attache conferences followed, to exchange that vital information and a directory compiled of officers with responsibility for telecommunications. The U.S. was now committed to canvass world opinion on international telecommunications while exploiting a network which supplied accurate local intelligence.

The U.S. also devoted its attention to the ITU, exerting influence on its organization, structure, resources, priorities and its budget. The newly formed U.S. Bureau was to give the task priority and conducted its own study of the ITU and how it might best serve U.S. interests.

The OECD, spawned in 1948 from the Organization for European Economic Cooperation (OEEC), also attracted U.S. attention. The organization was to be a major influence in assisting the U.S. on the trade aspects of international telecommunications.

While the world was changing and the need for a more progressive approach to telecommunications was wanting, there were many different, and sometimes opposing, views regarding what was the right course to take.

Few countries seemed to question the benefits which might accrue from more sophisticated telecommunications--economic, social and industrial--but many were fearful that their autonomy would be sacrificed, that promises made by the U.S. would not be realized and that they would be swamped by superior technology, becoming nothing more than other outlets for mass produced U.S. technology or yet one more market for over-sophisticated U.S. telecommunication services.

> Since telecommunications is a highly regulated sector in many countries, with many regulations designed to meet national social or economic objectives, this is obviously a sensitive and difficult area. . . . Our OECD initiatives are also making telecommunications experts more familiar with trade concepts and their implications and trade experts more familiar with national and international regulatory framework which governs telecommunications. (14)

Britain, although a staunch European was an ideological ally of the U.S. But many other European countries (and other members of GATT and the OECD) were not so sympathetic. They were developing their own international telecommunications policies, also reflections of their social and political priorities. But on many occasions they proved to be obstacles to U.S. ambitions. The U.S. met resistance from countries which considered that the benefits of U.S. international telecommunications policy were more likely to accrue to American companies than their own. The European companies have often quoted, as evidence, the reluctance of the U.S. to fully open its telecommunications markets to foreign competition. For example, foreign owned companies cannot own more than 25 percent of a license involving a broadcasting frequency--restrictions which now apply to mobile telephony and radio/television ownership.

Also the U.S. has made little attempt to disguise its ambitions to penetrate foreign markets. Lady Diana Dougan, the first U.S. coordinator for international communications, has outlined that policy many times (15).

> America's ability to open up foreign markets is dependent upon our ability to enlist the support of the potential customers and beneficiaries of competition. It's naive to expect the ministries of telecommunications to be enthusiastic, much less receptive, to sharing or diminishing their controls. The U.S. has a fairly open market, while in most other countries, telecommunications is still government--regulated. . . . Is it really in their interests to liberalize? Are we trying to impose American values on them? Of course. (16)

The U.S. Industrial Outlook report of 1992 appeared optimistic but with equally stark reservations. "The trend toward globalization gained momentum during 1991 . . . . However, despite the large corporate demand for private networks, users still face formidable obstacles in designing and implementing international private networks" (17).

But the fears of those resisting the U.S. global push are also aired in the same report. "Since telecommunications costs absorb a significant percentage of many firms' revenues, overseas policy reforms that result in cheaper transmission costs and the ability to configure networks according to each company's needs should contribute to success in international markets" (18).

Table 1-1. Economics Of Transatlantic Cable Systems 1956-92

System	Year	Tech	Cost(US$M)	Paths	Cost/path(US$)
TAT-1	'56	Coax	49.6	89	557,079
TAT-2	'59	Coax	42.7	98	435,714
TAT-3	'63	Coax	50.6	175	289,143
TAT-4	'65	Coax	50.4	138	365,217
TAT-5	'70	Coax	70.4	1,440	48,889
TAT-6	'76	Coax	197.0	8,000	24,625
TAT-7	'83	Coax	194.6	8,400	23,167
TAT-8	'88	Fiber	335.4	37,800	8,873
TAT-9	'92	Fiber			
U.S.-U.K.			14.1	3,150	4,476
U.S.-France			17.3	3,150	5,492
U.S.-Spain			19.2	3,150	6,095

Source: U.S. Department of Commerce. "Transatlantic cable systems 1956-92". Washington: Department of Commerce, 1992.

Those costs have fallen, much due to the shrinking cost of a voice channel on high capacity cables.

The construction cost of a voice path in the first transatlantic cable (TAT-1, 1956) was U.S.$ 557,079 but by the time the first fiber optic cable (TAT-8, 1988) was operational more than 30 years later, the price had dived to U.S.$8,873 (19). Now TAT-12 has been laid and in 1996 TAT-13 (20).

However, the U.S. is now not alone in spreading the gospel of globalization. Support comes from the international organizations, whose opinions it has cultivating.

For example, the ITU is of the belief that with new international alliances being forged in telecommunications, national borders are becoming less and less relevant. "Telecommunications is not just a dynamic sector in its own right. It is now recognized as a key technology underlying the whole global information economy and society, with important implications for political, economic, social and cultural development" (21).

The OECD holds a similar view. Efficient telecommunications and productive economies are now permanently linked, it says, and telecommunications is to the information revolution what transport was to the industrial one. Telecommunications is a highly lucrative industry where the rewards are handsome for those with the skills and the expertise to exploit it: the industry accounts for sales worth U.S.$350 billion (equipment and services) in OECD countries (22).

Similar sympathetic support comes from the International Chamber of Commerce (ICC) which represents the international business interests of 100 member countries. It believes that intense pressure should be exerted on the PTTs to reconsider their policies. Europe is a prime target. Few of these authorities, it maintains, can release capital in sufficient volume to upgrade their networks to the standards now demanded by international business, so they must seek other solutions. Any economic system, it further argues, which is geared purely to home produce is doomed to be replaced by one where production facilities, financial capital, business support services, target markets, employees and corporate identities recognize no national boundaries (23).

But the U.S., while attempting to drive international policy, is facing a major diplomatic challenge. There are many who consider the technological gap between the North and South to be unacceptable.

According to the World Bank, developing countries need U.S.$23 billion a year during the 1990s to build their telecommunications infrastructure, sums which cannot be generated from internal sources, taxation or development loans.

> Recognizing the link between a high-performing telecoms network and a high-performing economy, developing countries see privatization as instrumental in mobilizing funds for the development of their networks and business services. . . . Investors are recognizing that the correlation between the sector and the economy works both ways. The phone company is not only a catalyst for growth but also an indicator of the underlying economy. (24)

But not everyone believes that such global change, as defined by the U.S., is inevitable. While many acknowledge the theoretical economic benefits which result from advanced telecommunications, some (even among the developed nations) are resisting U.S. pressure--for example France and Germany--and insisting on autonomy (see chapter 2).

In the end, the questions and answers are political not technical. The FCC's policies, the White House approvals or vetoes and the U.S.'s attitude to foreign companies are all political weapons designed to ensure that the reluctant countries become more responsive.

But even with ITU support and that of the OECD, the U.S. has measurable opposition.

> Delivering information technology to the doorstep of the world is going to require both partnerships and competition on a scale we've never seen before. It's going to put the new concept of globalism to the test. The companies that provide information technology, the governments that set policy for it, the financial institutions that fund it--all of them will be required to balance self-interest with global interests. . . . If we truly believe in a global economy, then we must ensure that all regions of the world have the basic technology required to participate fully in that economy. (25)

But the mechanism exists to influence international telecommunications policy. An unexpected agreement emerged in 1994 from the G7 (U.S., Canada, U.K., France, Italy, Japan and Germany) summit of Naples--an agreement to stage another, this time in Brussels, to confront the problems of a Global Information Infrastructure (GII), the international version of the Information Superhighway (National Information Infrastructure, NII). The agenda promoted U.S. domestic telecommunications policy abroad--private investment, competition, flexible regulation, open access and Universal Service. It was an ideal opportunity and forum for the U.S. to attempt to sell its agenda overseas. This strain of U.S. foreign telecommunications policy was a reflection of its domestic one.

> The private sector will clearly lead the development and implementation of the GII, as investors, builders, operators, providers and users, we believe that cooperation and collaboration among nations is essential to realize the full potential of the GII. Concerted action on such issues as regulatory and competition policies, interoperability, global applications, and protection of information content, will be critical in advancing the development of the Global Information Infrastructure. (NII Task Force, Database, Extracted from Internet site, October 1995)

The U.S. made the same points in Buenos Aires, through Vice President Al Gore. His language reflected the U.S.' nagging frustrations.

> The GII will be the key to economic growth for national and international economies. For us the United States, the information infrastructure already is to the U.S. economy of the 1990s what the transport infrastructure was to the economy of the mid-20th century. . . . The integration of computing and information networks into the economy makes U.S. manufacturing companies more productive, more competitive, and more adaptive to changing condition and it will do the same for the economies of other nations. (26).

Information was an industry on which U.S. economic expansion depended, Gore emphasized, claiming that 8 out of 10 new jobs would be created in this area; that 60 percent of U.S. workers are "knowledge workers," whose jobs depend on information;

and that inward investment in the developing world would only be realistic if comparable infrastructures were erected.

International Accounting Rates and the U.S. Trade Deficit

The money given to foreign PTTs for the completion of an international call is a politically sensitive issue in the U.S. For example, a proportion of the cost of a telephone call from the United States to France would comprise a payment to France Telecom to terminate the call.

These payments add substantially to the revenues of foreign exchequers and are likely to be relinquished reluctantly. They contribute to maintaining high international tariffs.

> We are not prepared to conclude that the U.S. public interest is being served when, despite sustained U.S. carrier efforts and U.S. government encouragement . . . telephone service accounting rate has dropped only a few pennies, to a level that, by any reasonable measure, is still clearly significantly above the cost of providing international telephone service.(27)

Reducing the Accounting Rate is a major feature of international U.S. telecommunications policy. A substantial drop in such costs would not only act as an economic catalyst, the U.S. believes, providing a surge in international telecommunications traffic, but would help wipe out an unacceptably high trade deficit in this sector.

The amount paid out (net settlement payments) by the U.S. has grown at an average of 25 percent a year since 1975 when it was U.S.$78 million (28). The U.S. generates, approximately, twice as many calls as it receives. Subsequently, the Accounting Rate has produced an annual trade imbalance of U.S.$4 billion. Even leased lines are affected. "But even with the reductions of 50 percent or more that many PTTs already have made, leased line costs in many European and Asian countries are still two to three times higher than comparable rates charged by carriers operating in deregulated environments, such as the U.S." (29).

Only a small number of countries account for a large portion of the net payments.

Table 1-2 . Net Settlement Payments To Top Twelve Countries(U.S.$M) 1985-90

Country	'85	'86	'87	'88	'89	'90
Mexico	222.1	247.1	312.6	410.9	533.9	582.9
W.Germany	87.7	126.1	156.7	167.2	222.5	257.5
S.Korea	72.0	76.7	85.2	106.2	111.7	110.6
Philippines	63.2	78.2	86.0	94.7	114.8	140.5
Japan	52.9	62.4	78.4	94.9	78.5	76.8
Colombia	37.3	47.7	57.8	63.3	70.9	77.6
Italy	30.1	41.0	51.5	60.9	69.5	77.7
Dom.Rep.	23.9	44.7	48.0	61.9	75.3	80.8
Israel	39.9	43.9	44.4	47.4	57.5	67.9
U.K.	8.5	32.6	41.5	44.5	46.2	74.8
Taiwan	28.7	36.1	39.5	43.9	45.0	48.1
Brazil	21.6	30.9	25.4	36.7	43.6	51.4

Source: Federal Communications Commission.
Settlement Payments 1985-90. Washington: FCC, 1992.

The OECD is sympathetic. It has noted that while the cost of an international call has been steadily decreasing, there is still too much disparity in charges between countries at comparable levels of development. Also where the cost of calls to customers has dropped the amount which the U.S. carrier has had to pay has, in many instances, not reduced proportionately, if at all.

> Although international telephone charges have been reduced there is still a substantial imbalance in the OECD area between charges for calls originating in one country and calls terminating there. Of the total bilateral collection charges between OECD countries 5% are more than twice the cost of a call in the opposite direction and another one in ten is 50% more than the cost of a call in the opposite direction.(30)

The charges are critical elements in trade discussions. The U.S. considers that there are no proportional cost reductions despite advances in technology.

> At present, international calls are often a monopoly or at least a cartel. Usually only one operator--the national giant--has the right to hand calls across the international gateway that separates one country's telephone network from another's. At the gate, predictably enough, it pockets a charge. This lucrative custom is backed up by the system of international accounting rates, which allocates the cost of a call between countries. The system is biased against countries that send more calls than they get because they have relatively low tariffs. . . . The system particularly irritates the United States, which has a deficit of some $ 4 billion, aggravated by a lively charge-card and call-back business. . . . In continental Europe, these tariffs are even further out of line with costs than they were in America when that market was liberalized a decade ago. . . . And the floor in Europe would fall faster as all those fibber-optic cables come on stream, causing a capacity glut just like that in the United States. (31)

International capacity in cable is growing faster than the traffic, a factor the U.S. hopes will add more pressure to reduce the price of international telecommunications (32).

However, the original structure of the PTTs--still prominent in Europe--was devised to run both the telephone and the postal systems. Even where changes have taken place, the lucrative revenue accruing from international telephone traffic is still considered by some countries to be an invaluable source of foreign currency. And although the system of international Accounting Payments has been revised several times, since it was established more than thirty years ago, it is still inequitable and does not reflect distances and true cost.

Eliminating distance as an element in the cost equation is thought to be a major advance. "It will alter, in ways that are only dimly imaginable, decisions about where people live and work; concepts of national borders; patterns of international trade. . . . Once costs are no longer distance-sensitive, a premium becomes harder to maintain" (33).

Although the payments allow the PTTs to upgrade their ends of international networks, the U.S. is unhappy with a system that lays part of the bill for foreign improvement at its door. And still too many countries, the U.S. maintains, consider such payments as a form of disguised foreign aid or subsidy.

> The degree to which the savings from technological advance have been passed on to consumers has differed greatly from country to country; and many carriers have preferred to retain the efficiency gains in the form of additional profits on the international service, in some cases so as to finance domestic loss-making activities and in others as a source of contributions to the government's consolidated revenue.(34)

Simply, the Accounting Rate system is structured to keep costs artificially high to meet certain social and public policy goals (e.g. direct and indirect subsidies for residential users)(35). The USTR is tackling this dimension of international telecommunications. Major telecommunications issues were put aside at GATT, in March, 1994, to allow the ratification of the main agreement.

> Now that the countries of the European Union, which negotiate as a block, have agreed to open their markets to each other, they could--if they wished--agree to do the same to the rest of the world. If the Geneva talks were to succeed. . . unrestricted competition on the larger routes would take effect by the end of next year. That would probably deal a fatal blow to the system of accounting rates.(36)

The U.S. pressure is unrelenting. The latest report from the ITU, released before Telecom 95 in Geneva, ranks the U.S. as first of 39 nations and the country leading the drive towards new advanced low cost global networks (37).

The Anomalies in U.S. Telecommunications Foreign Policy

Unwittingly, the U.S. contributed its part to artificially high prices in international telecommunications. The U.S. had been as conservative as any bureaucratic PTT when, in 1964, it had insisted that the providers of telex and telegraph services be protected from competition. A very untypical decision, by pro-competition standards, was to result; certain companies would be given the data business (telegraph, telex etc.) and AT&T

would not be allowed to compete. The decision (known as Tat-4) was to survive for nearly twenty years (1982) (38).

By then the climate had changed, technically as well as politically, making it increasingly difficult to make any significant distinction between voice and data. It was a new world where pictures, information, voice and music could be recorded in digital form and transmitted across continents in seconds. The Department of Defense, then the largest single user of international leased circuits, was a supporter of change claiming that with the increasing use of digital technology the distinction between voice and data was artificial (39).

Another decision kept the prices of satellite circuits high. The U.S. created its own satellite cartel, through the Communications Satellite Act 1962, by forming Comsat (Communications Satellite Corporation) which represented American interests in Intelsat (International Satellite Organization). This system allowed no competition in the international satellite market and kept the price of satellite circuits high. The U.S. had committed itself to a policy, the implications of which it did not nor could not predict. That commitment to Intelsat was to encase the U.S. in a political straight-jacket.

> Intelsat is in the midst of a turbulent international environment that is much changed from that existing at the time of its creation. These changes are the result of a host of factors: new industry structures and competition policies at the national level, developments in fiber optic cables and satellite technologies, and corrosive pressures on established pricing for international services. Cumulatively, the new environment virtually demands that the United States and other countries that have played the lead in the international satellite organization take a fresh--and far reaching--look at Intelsat's role.(40)

Other pressures forced the U.S. to defend Intelsat against potential lost revenue to cable. The U.S., in the late sixties, devised a loading policy which determined that AT&T distribute its international traffic evenly across both mediums. But in the 1970s, given the apparent success of the satellite in the home market (the 'open skies' satellite domestic policy since 1972) (41), it became increasingly difficult for the U.S. to justify its international satellite policy. The Intelsat commitments, tangled in a complex web of foreign and trade policies, have not been easy to unravel. In the end, preference for a particular medium was dictated by the application (voice on cable, to eliminate transmission delays and data/ broadcasts on satellite).

The Reagan Administration in November 1984 sanctioned 'open skies' internationally. But it was a political gesture only. It could not act unilaterally and any service was subject to negotiations with the respective foreign authority (42).

PanAmsat, which has fought successfully to compete against Comsat/Intelsat is still the only privately owned international satellite company operating out of the U.S. with a customer-base comprised largely of television companies/ broadcasters (43).

The Internet and the Global Perspective

The Internet has extended the debate of the infrastructure of international telecommunications even further, its very existence questioning the status and power of the telecommunications authorities and operators. Its growth has also challenged some of the values and norms of the telephone industry. Additionally, while the cable and telephone companies have been promising the new age of multimedia, it was the Internet which delivered. Without the capital investment committed by telephone and cable, the multimedia society arrived via the Internet, promoted by a policy of public sphere and the private sector. It has demonstrated that low cost, international telecommunications networks can successfully be conceived, even within the technical limitations of the existing structures, if given the latitude to do so.

> That pressure is being reinforced by the growth of the Internet, most of whose users pay a flat-rate subscription to cover unlimited use, plus the cost of a local call to get connected. As more and more people communicate by Internet across continents for next to nothing, they will ask why telephone calls should be different. . . . If the Internet were to become a serious rival to long-distance telephony, the increase in traffic would require a vast amount of additional investment--which probably only the existing telecoms operators could provide. But even with a tiny share of traffic, the Internet's impact on prices may be large. That presents the operators with a problem. (44)

The Internet has heralded a new era of global telecommunication, making a significant impact on many sectors of society--business and consumer alike. It has advanced rapidly from a modest profile, of some ten years ago, to its current status. Its success has inspired the model of a global information infrastructure.

There are diverse perceptions of the Internet which question how it should be managed or controlled, how could it be converted into a commercially driven network and how cable and telephone can merge with it?

Those differences are marked when gauging the attitudes of the United States and Europe. To some, the Internet is a radical social experiment which has expanded beyond the most optimistic expectations while to others it represents the economic infrastructure of a new century and only its efficient use and economic management will realize its full potential.

It is all of these and none. It was no social experiment but a scientific one, a network comprised of approximately ten thousand individual networks; its cost is buried in a host of other moneys, spawned from government funds which had little social or economic purpose other than to lubricate U.S. military research.

In 1982 the Defense Advanced Research Project Agency's ARPANET harnessed what was then experimental technology to connect selected military research bases to 15 contracted universities on the west coast of the United States. Computer scientists were its primary users, transferring data at relatively low speeds (56 thousand bits per second). By the mid 1980s with funding specifically targeted by Congress, the National Science Foundation established the backbone of the U.S. Internet, NSFNET, a catalyst to the network's growth across the globe (45).

The personal computer gave it further impetus, increasing demand for cheap communications. The recent statistics published by the U.S. Census Department on home computer ownership and use (based on the October 1993 Current Population Survey) show the phenomenon of that growth. There are an estimated 100 million U.S. computer users (home, work, school) (46).

But the last three years have witnessed the real revolution. In that time, the Internet has grown from being the province of the computer "techie" into a global communications infrastructure on which commerce and consumer are coming to depend.

Simply, the global Internet has evolved with diverse purpose, comprised of different networks of varying speeds and capacities and inconsistent quality standards.

Essentially, the product is far from homogeneous, arguably a market of fringe operators, where a high proportion of its users enjoy facilities without payment, supported by government/state subsidies which prevents its true cost from ever being measured.

Three studies of the profile and attitude of the current users, consumer and commercial, give an indication of how diverse--though niche and elitist--are these groups.

The European Commission's Directorate General on Information, Communication, Culture and Audiovisual conducted its own survey to assess knowledge of the Internet and the skills to 'navigate' it in the major industrial European countries--France, Germany, Italy, Finland, Denmark, Sweden, Belgium, Luxembourg, the Netherlands, Spain, Portugal, the U.K., Ireland, Greece and Austria (47). Its findings supported the view that the Internet usage is fragmented, that demand is contained in definable demographic pockets, suggesting that its products are still too narrowly focused. Only 50 percent of those surveyed were familiar with the terms Information Highway or Superhighway. The most familiar were the Finns, Danes, Swedes and the Dutch, men more than women, young more than old, and the formally educated and professional groups (48).

Coopers & Lybrand, took the debate a stage further by surveying business leaders in France, Germany, the Netherlands and the U.K. Here, the Internet was considered to be a principal innovative asset which could determine whether Europe lagged United States and Japan in industrial opportunity (49).

A survey on the World Wide Web (WWW) conducted by researchers at the University of Michigan and Georgia Tech describes the users as white, well educated, relatively affluent, and male.

Of those WWW users, the Michigan study indicates, 53% are single, 70% have at least an undergraduate degree while their median income is about U.S.$65,000. These figures may represent another dimension of those affluent middle-class white males who embrace technology.

Certainly supplementary evidence from the Michigan study would seem to support that supposition. Compared to the general population, these WWW users consume technology in volume--21% computer banking, 21% beeper/pager, 22% cellular phones, 35% call waiting, 84% VCRs, 90% music CDs, 28% laptop computers, 62% CD-ROMs and 72% fast modems (14.4K or greater) (50).

Once the main attraction of the 30 million Internet users , electronic mail now constitutes only about 30%, the other major uses being dialing into a remote database (Telnet), transferring data from one site to another (FTP, File Transfer Program), and navigating computer databases selected from designer menus (Gopher).

Further user data have been provided by government agencies.

According to the U.S. Census Department, based on Current Population Survey October 1993, one third of the estimated 100 million U.S. computer users (home, work, school) are aged 17 or younger; 89.8% of those in the occupational category use a computer at work; and fewer blacks own computers than any other racial group.

But the consumer on-line services which package email, information services and Internet gateways have been attracting women in increasingly larger numbers, as shown by the results of Interactive Publishing Alert's 1995 Survey of Women Online (51).

> The survey, sponsored by Apple Computer, polled more than 300 women from Prodigy, CompuServe, America Online, eWorld, Genie, Delphi, The WELL and other on-line networks. The majority picked email as the most popular feature while special-interest bulletin boards (forums for exchanging email) came a close second. Only 60 said that downloading software was important, and only 20 named on-line shopping, banking and travel reservations as favorite activities. Also, in a follow-up survey of 100 women, 64 percent of the respondents said they had never purchased a product or service on-line.(52)

Out of the Public Sphere

The political atmosphere in which the Internet is now growing is vastly different from that in which the network was conceived. There is a new political intent on Capitol Hill. A telecommunications market with minimal or no regulation with full competition is the goal.

But the U.S. Internet backbone, the NSFNET, was a government sponsored program where the costs were subsumed in a host of related research projects. Its annual budget for upgrade and operation was about U.S.$ 20 million.

In November 1987 Merit (a consortium of Michigan Universities) won a five year contract to design, engineer and construct the NSFNET backbone. By 1990, Merit had joined forces with IBM and MCI to form Advanced Network & Services (ANS). The formation of ANS attracted interest from the private sector. "Just as private contractors helped build the interstate highway system, this new corporation will help build the national information superhighway today's information age demands" (53).

Democrats and Republicans have embraced private capital as a way to fund the expansion of the Internet. Both parties consider its success to be inspirational in devising a global telecommunications network. The private sector has been involved in the development and management of some parts of the Internet, working under contract for the government, but a new regime is in the making where the private sector will dominate.

That would include the withdrawal of subsidy for the Internet and new roles found for integrating the cable, telephone and broadcasting industries with the Internet.

The withdrawal of the NSF subsidy, in May 1995, completed a two year program designed to ensure that the private sector would play a substantially greater role.

> By limiting commercial traffic on the net backbone for years, the NSF stimulated the growth of alternative private sector backbones; today there are at least seven, run by companies that include phone giants MCI and Sprint. In November of 1994, NSF advised the regional networks that comprise the greater Internet to disconnect from NSFNet and negotiate contracts with the commercial providers.(54)

The withdrawal of the subsidy has more than financial significance. It reflects a new political age which is determined to minimize the public purse, put commerce first and forge a new policy for domestic and international telecommunications.

New legislation will reflect this age. But what the legislation represents is as important as its content. It embraces private capital with minimum constraint and unbridled multimedia industries where the market and competition will dictate the outcome. Coupled with this commercial drive is a new age of uncertainty where the profile of the Internet may be forced to change to become part of a national and global information infrastructure. "NSFNet service was never free, but its rates were fixed; with its departure, a big, wholly unregulated business has sprung up overnight. The new backbone players will have no limits on what they can charge; on the other hand, they must compete with each other for customers, setting the stage for net price wars that might ultimately benefit consumers"(55).

That philosophy is an anathema to many on the Internet. It is run by a collection of "zealot amateurs," who have produced a mosaic of 30,000 plus individual networks linking more than 40 nations (56).

Each of these networks is self-financed and self-managed, giving access to all others which are technically compatible. The typical hierarchy would be a local network, connected to a computer (router) which in turn links with a regional network to the backbone, all able to communicate using a common language TCP/IP (Transmission Control Protocol/Internet Protocol).

> Some of the regional networks receive subsidies from the NSF; many receive subsidies from state governments. A large share of their funds are collected through connection fees charged to organizations that attach their local networks to the mid-levels (regionals). For example a large university will typically pay between U.S.$60,000 and U.S.$100,000 per year to connect to a regional.(57)

But the growth of the Internet and the changes which it has inspired demand major investment. The appetites of its users, commercial and consumer, appear insatiable. It has quickly acquired the contours of a major industry and has attracted the attention of those business interests anxious for growth opportunity.

From 1985 to 1994 the Internet grew to its 30,000 networks and its two million computer hosts (quantity). Of these 640,000 are educational sites, 520,000 commercial and 220,000 governmental. The traffic (demand) grew from 85 million packets at the beginning of 1988 to 56 billion by March of 1994 (58).

The New Internet

In parallel with this major communications revolution is the growth of a marked political ideology, now demanding minimum regulation and an unbridled industry. That atmosphere demands that the constraints imposed on the telecommunications market of today be abolished. The fiefdoms of cable, satellite, telephone and many others will be encouraged to knit into a domestic infrastructure, a blueprint which the U.S. will seek to transport abroad.

It is difficult to accurately determine what would be the profile of a new Internet, driven by competition, usage pricing and true costs. But it is but one element in the U.S. domestic and international telecommunications policy. Predictions that government funding would still play a minor role may be optimistic given the political clamor for change. A new aura surrounds the industry.

> The balance of trade improves U.S.$14 billion by 2005 (3.4 million new jobs) due to lower domestic inflation . . . sweeping changes in the way communication industries in this country are regulated . . . . Finally, as regulatory and legal barriers to competition are removed, it is generally recognized that the system of subsidies that regulators and the industry have long relied on to promote universal telephone service may have to be overhauled.(59)

The Commercial Internet Exchange (CIX) was formed in 1991 to promote the use of the Internet for business. CIX, effectively the trade association of such network providers in 1996 had over 200 members (60). The commercial user is now a permanent fixture, generating huge amounts of revenue, creating in its wake a new and lucrative industry (61). The commercial response to the Internet's success has been a prime factor in the domestic policy changes which will soon translate internationally (62).

> A national information infrastructure (NII) can provide a seamless web of interconnected, interoperable information networks, computers, databases, and consumer electronics that will eventually link homes, workplaces, and public institutions together. It can embrace virtually all modes of information generation, transport, and use. The potential benefits can be glimpsed in the experiences to date of the research and education communities, where access through the Internet to high-speed networks has begun to radically change the way researchers work, educators teach, and students learn. To a large extent, the NII will be a transformation and extension of today's computing and communications infrastructure (including, for example, the Internet, telephone, cable, cellular, data, and broadcast networks). NII TASK Force Statement, Internet, October, 1995

Summary

This chapter gave the background to international telecommunications and the posture of the United States. Additionally, it has given the background to the Internet and its phenomenal success and how it has become a model for those countries--particularly the United States and the European Economic Community--wishing to encourage cheap and efficient international telecommunications. It also highlights a new mood, particularly prevalent in the United States, where the commercial sector will be the principal force in international telecommunications.

The next chapter will discuss in detail how the EEC has committed itself to tearing down national frontiers in telecommunications which have for decades protected their indigenous, if not inefficient, telecommunications industries, how the Internet (once more) has succeeded even in politically sensitive Europe in making an impact on international telecommunications and how a new liberalized telecommunication sector is about to emerge on the continent by 1998.

Notes

1. Federal Communications Commission. ITT Worldcom, RCA, Western International v Consortium Communications International. Washington: FCC 12 Feb. 1980: 23.

2. U.S. Congress. Subcommittee on Communications, Committee on Commerce, Science and Transportation, United States Senate. International Telecommunications. Washington: U.S. Congress, 28 Feb.1987: 29.

3. U.S. Congress, International Telecommunications 6.

4. U.S. Congress. Committee on Government Operations, International Information Flow: Forging a New Framework .Washington: U.S. Congress, 11 Dec. 1980. U.S. Congress. Committee on Commerce, Science and Transportation, United States Senate, Long Range Goals in International Telecommunications and Information, An Outline for United States Policy. Washington: U.S. Congress, 11 Mar. 1983.

5. U.S. Congress, International Information Flow 2.

6. U.S. Congress, International Information Flow 4.

7. U.S. Congress, Long Range Goals 19.

8. U.S. Congress, Long Range Goals 67.

9. U.S. Congress, Long Range Goals 47.

10. U.S. Congress, Long Range Goals 54.

11. U.S. Congress, International Telecommunications 31.

12. U.S. Congress, International Telecommunications 31.

13. U.S. Congress, International Telecommunications 32.

14. U.S. Congress, International Telecommunications 36-37.

15. Ambassador Diana Lady Dougan served in the Reagan administration as the first U.S. coordinator for international communications and information policy. Also, was assistant secretary of state and given the permanent rank of ambassador. She has overseen the international telecommunications policy interests of relevant government agencies including competition in international satellites, private undersea cable networks, international leased lines, international credit-card calling protocols, high-definition television production standards and mobile satellite services.

16. "Ambassador Diana Lady Dougan talks policy." Network World 1 May 1989: S26. Online. Nexis. 11 Feb. 1996.

17. U.S. Department of Commerce. U.S. Industrial Outlook 1992, Telecommunications Services, Section 28. Washington: U.S. Department of Commerce, 1992: 28/3.

18. U.S. Department of Commerce, U.S. Industrial Outlook, 1992 28/4.

19. U.S. Department of Commerce. U.S. Industrial Outlook 1991, Telecommunications Services, Section 29. Washington: U.S. Department of Commerce, 1991: 29/5.

20. Kenward, Michael. "Survey of International Telecommunications." Financial Times 3 Oct. 1995:XXV111. Online. Nexis. 11 Feb.1996.

21. International Telecommunications Union (ITU). Tomorrow's ITU: The Challenges of Change. Geneva: ITU, 26 Apr. 1991: 12.

22. Plantain, Amy. "The brave new world of telecommunications." OECD Observer Dec. 1990: 6. Online. Nexis. 11 Feb. 1996.

23. International Chamber of Commerce. International Telecommunications, Towards Greater Competition in Telecommunications. Paris: ICC, 3/4 Dec. 1991: 14.

24. Shetty, Vineeta. "Telecomms hottest properties." Communications International Apr. 1993: 46. Online. Nexis. 11 Feb. 1996.

25. Allen, Robert E. Press Conference, Telecom '91. Geneva/ New Jersey: AT&T, 7 Oct. 1991: 2&5. "AT&T chairman calls on world's information industry to deliver benefits of information technology to developing and industrial nations." Business Wire 7 Oct. 1991. n. pag. Online. Nexis. 11 Feb. 1996.

26. Gore, Al. ITU World Telecommunications Development Conference. Washington: White House, 28 Mar. 1994. n. pag. Online. Nexis. 10 Feb. 1996. Titch, Steven. "Gore urges ambition for global telecom." Telephony (Thomson U.K.) 28 Mar.1994: 10. Online. Nexis. 11 Feb. 1996.

27. Federal Communications Commission. Regulation of International Accounting Rates. Washington : FCC, 23 May 1991: 3435.

28. Federal Communications Commission. Common Carrier Bureau, Industrial Analysis Division. Trends in the International Communications Industry, 1975-90. Washington: FCC, 4 Oct. 1991: 2.

29. Heywood, Peter. "Leased-line forecast: deeper price cuts." Data Communications Feb. 1995: 55. Online. Nexis. 11 Feb. 1996.

30. Ypsilanti, Dimitri. "The cost of calling home." OECD Observer Dec. 1990: 11. Online. Nexis. 11 Feb. 1996.

31. "Welcome to the world." Economist 30 Sept. 1995: S25. Online. Nexis. 11 Feb. 1996.

32. Ypsilanti 11.

33. "The revolution begins, at last." Economist 30 Sept. 1995: 15. Online. Nexis. 11 Feb. 1996.

34. Ergas, Henry, and Paterson, Paul. Telecommunications Policy. London: Butterworth-Heinemann, Feb. 1991: 36.

35. National Telecommunications and Information Administration (NTIA). Testimony before the Federal Communications Commission. Regulation of International Accounting Rates. Washington: NTIA, 12 Oct. 1990: 7.

36. "The revolution begins, at last." 15.

37. Jacobs, Jennifer. "Telecoms sector generates U.S.$1.4 trillion in revenues." Business Times 4 Oct. 1995:1. Online. Nexis. 14 Feb. 1996.

38. Federal Communications Commission. Overseas Communications Services. Washington: FCC, 22 Dec. 1982: 663-664.

39. Federal Comunications Commission, Overseas Communications 647.

40. U.S. Congress, International Telecommunications 71.

41. The Office of Telecommunications Policy established by President Nixon based on a recommendation from Johnson administration. Open Skies policy of open entry and competition for U.S. domestic satellites 1972 was a forerunner of competition among long distance carriers and provided an economical means of distributing television nationwide.

42. Reagan, Ronald. Presidential Determination, PD 85-2, Alternative Satellite Systems. Washington: White House, 28 Nov. 1984. n. pag.

43. "MEASAT and PanAmSat dual launch for Hughes." Business Wire 9 Jan.1996. n. pag. Online. Nexis. 15 Feb. 1996.

44. "The revolution begins, at last." 15.

45. U.S. Congress. Dr. Eric S. Hood, Testimony as submitted to U.S. House of Representatives Subcommittee on Science of the Committee on Science, Space and Technology. Washington: U.S. Congress, 12 Mar. 1992. n. pag. Online. Internet. 10 Feb. 1995.

46. U.S. Census Department. Computer User Survey. Washington: U.S. Census Department, Oct. 1995. n. pag. Online. WWW. http://www.census.gov. 10 Sep. 1995.

47. European Commission's Directorate General on Information, Communication, Culture and Audiovisual. IT Survey. Brussels: EEC, 1995. n. pag. Online. WWW. http://meritbbs.rulimburg.nl/hleg.html. 15 Nov. 1995.

48 . European Commission, IT Survey n. pag.

49. Coopers & Lybrand. Communications Renaissance, IT Survey. Brussels: Coopers & Lybrand, 1995. n. pag. Online. WWW. http:\\www.colybrand.com/. 20 Nov. 1995.

50. Gupta, Sunil. What in the World is a Web User. Ann Arbor: University of Michigan Business School, Feb. 1995. n. pag. Online. WWW. http://www-personal.umich.edu/~sgupta/hermes/. 10 Mar. 1995.

51. Reeve, Vicki L. "It's about time how to market to women online." Multimedia & Videodisc Monitor 1 Dec. 1995. n. pag. Online. Nexis. 10 Jan. 1996.

52. Reeve n. pag.

53. Van Houweling, Douglas E. Testimony on National Science Foundation Network, before U.S. House of Representatives subcommittee on Science. Washington: U.S. Congress, 12 Mar. 1992. n. pag. Online. Internet. 10 Dec.1995.

54. Green, Noah. "Weaning the net: the feds hand cyberspace to the private sector." Village Voice 11 July 1995: 41. Online. Nexis. 16 Feb. 1996.

55. Green 41.

56. Traxler, Bob. Testimony before House Science, Space and Technology Committee. Washington: U.S. Congress, 12 Mar. 1992. n. pag. Online. Nexis. 14 Feb. 1996. Mackie-Mason, Jeffrey K., and Varian, Hal R. Economic Frequently Asked Questions about The Internet. Ann Arbor: University of Michigan. n. pag. Online. WWW. http://www.ipps.lsa.umich.edu/ipps/papers/info-nets/useFAQs/useFAQs.html. 10 Mar. 1995.

57. Mackie-Mason, Jeffrey K., and Varian, Hal. R. n. pag.

58. Internet Index. n. pag. Online. WWW. http://www.openmarket.com/info/internet-index. 29 June 1995.

59. WEFA Group. Economic Impact of Deregulating. Burlington, Massachusetts: WEFA, Feb.1995. n. pag. Online. WWW. http://www.cob.ohio-state.edu/dept/fin/resources_data/provider/wefa.htm. 9 Mar. 1995.

60. "U.S. West plan to up rates on data service protested." Denver Post 9 Jan.1996: D2. Online. Nexis. 10 Jan. 1996.

61. Mackie-Mason, Jeffrey K., and Varian, Hal R. Pricing the Internet. Ann Arbor: University of Michigan: Apr.1993. n. pag. Online. WWW. http://gopher.econ.lsa.umich.edu/FAQs/FAQsALL.html. 10 Feb. 1995. Cronin, Mary. J. Doing Business on the Internet. New York:Van Nostrand Reinhold, 1994. n. pag. Online. WWW. http://www.novalink.com/cronin/biomjc.html. 20 Mar. 1995.

62. Dern, Daniel P. Meeting the Challenges of Business and the Public End-User Communities on the Internet: What They Want, What They Need, What They're Doing. n. pag. Online. WWW. http://www.dern.com. 10 Jan.1996.

CHAPTER 2

EUROPE'S COMMITMENT TO ITS INFORMATION SOCIETY

In this chapter the commitment of the European Economic Community to its Information Society will be explored as will its determination to dismantle the national frontiers which have been barriers to efficient international telecommunications.

> In the not too distant future, the telecommunications networks will be capable of instantly transporting and processing voice traffic, text and images between any locations, be they homes, offices or businesses, thanks to digitalisation techniques and electronic processing of information. These networks will therefore constitute the nervous system of the economy, and more generally of tomorrow's society. EEC White Paper--Growth, Competitiveness, Employment: The Challenges and Ways Forward into the 21st Century .(1)

Despite the commitment of the European Economic Community, its Commission and some of its membership to low cost trans-continental telecommunications networks, they are far from being a reality on the Continent. The autonomies of the Member States, sanctioned and encouraged under the auspices of the European Union, have been obstacles to change. Practices which preserved and protected indigenous manufacturing and services have been difficult to eradicate, as vested interests (some serious national economic forces), have ferociously defended the status quo; the government owned agencies which control European telecommunications are the primary opposition.

Traditionally, the agencies had managed the postal service, then expanded into telegraph and telephone. The authorities, generically called the PTTs (Postal, Telegraph and Telephone), have been conservative and powerful, and while the Commission has made substantial inroads, these entrenched national interests are formidable barriers. These PTTs were supplied by equally powerful industrial groupings. France had Thomson, Germany Siemens and Britain GEC/Plessey. They were major employers, contributing substantially to national economies, heavily engaged in defense contracts. So, the PTTs still enjoy immense influence, flexing their political muscles at many levels of European negotiations.

The battle to link Europe with one telecommunications network is not new. What is novel is the European Commission's confidence not only to push for change but to insist on it and in so doing, develop a telecommunications policy (domestic and international) and a strategy designed to tailor Europe into an Information Society.

What has emerged from these studies is the needs of commerce and industry, the global profile of international business which now requires more from telecommunications, the increasing dependency of business on information and efficient ways of transferring it, the costly tariffs for intra-Community communication and the monopoly system which supports them.

Postwar Europe

A new mood in the wake of the Second World War was to attempt to exploit the spirit of Europe, less self-conscious of myopic nationalism which for centuries had been the catalyst to war. A coal and steel trade pact would be the axis of the continent, prepared to share natural resources while burying the political rivalries of France and Germany.

But by the mid-sixties, a Middle East crisis saw Europe again intransigent and insular, apparently much influenced by De Gaulle. The French president's veto of Britain's membership of the EEC in 1963, and his vow to continue to do so, seemed to reflect an all too familiar wave of nationalism that swept aside the progress made over the previous decades.

But now, in the 1990s, Europe is beginning to see itself as a continent once more, not a bland amalgam of European states but one whose vision is wider, forced on it by economics that today are defined in global terms. Economies, and the industries which support them, must have policies shaped to an international profile and have a similar perspective. Few manufacturers, financiers, suppliers or retailers can remain competitive if they think in terms other than global.

The membership of the European Community was derived from the Coal and Steel Community legislation , the Treaty of Rome, 1951, and further legislation bringing cohesion and consistency to its atomic energy ambitions, the Atomic Energy Community Treaty 1957. The early membership comprised of France, Germany, Belgium, Italy, Luxembourg and the Netherlands. The U.K., Ireland, and Denmark joined in 1973, Greece in 1981, Portugal and Spain in 1986. Finland, Sweden and Austria now make up the fifteen full EEC membership (2).

In 1986 the European Act was to lay the foundations for a major transition. No longer would Europe be considered just "The Common Market," its members exploiting one of the biggest trading blocks in the world, but it would move towards a confederation of states despite the diverse cultures and backgrounds. And while both France and Britain still had the vestiges of their once powerful colonial interests--and the political, economic and cultural contacts which accompanied them--it was clear that such alliances were at best obsolete and worse irrelevant. Policies were needed to respond to the threat of global trade and the fierce industrial competition emanating from North America and the Pacific Basin. That transition was to be complete with the ratification of the Maastricht Treaty in 1992. "In 1984 the European Community began formal discussion of creating a single European market, allowing for the free flow of persons, goods, services, and capital. This led to the drafting of the Maastricht Treaty-- which includes the Social Charter (3)--the current plan for economic and monetary union and closer political ties between European Community countries, including a common foreign policy"(4).

But more, the legislation was also an overt commitment to give Europe a new identity. Europe, since the original treaty, was to be shaped by

the European Council, comprised of the heads of state, expected to meet twice a year;

the European Commission made up of delegates from each country, 'independent' but appointed by the respective Member States for five years;

the Council of Ministers, comprised of ministers from the Member States, whose disciplines alter according to the legislation being discussed;

the European Parliament, elected to hold office for five years.

In theory the Commission is the executive which has the power to set the political agenda and issue directives to the Member States. Also, theoretically, the European Parliament has the power to vote the Commission out of office. The reality is the murky political waters somewhere in between.

The European Parliament was first elected by the member states in 1979. Supposedly, this led to a modest increase in its powers. Since then, it has acquired the reputation of being one of the most progressive international institutions as well as the first to be directly elected by those it represents. "It has passed important initiatives on foreign policy, human rights, ecological protection, and social welfare. The European Parliament has become the central focus for continental discussions of social and economic policy. Well-organized blocs (formally recognized by the Parliament as "political groups") maneuver to shape European Parliament policy" (5).

But for the EEC, even before the European Act, the drive towards liberalizing telecommunications was taking shape. At the center of that drive was the secretariat at the Commission whose mandate was information technology and international trade. It now considered telecommunications to be a lubricant to international trade and without it the continent would have little prospect of competing on a global scale. The Commission, and its respective secretariat, have been exerting pressure at every political level to make this possible and to erode the power of the PTTs and their allies. The Commission, certainly since the publication of its Green Paper on telecommunications in 1987 (6), was also overtly attempting to lead the membership towards creating that infrastructure which it hoped would fuse telecommunications into the social and economic fabric of an Information Society.

Moves Toward a New Europe

The U.K. for its part had made serious commitments to alter its telecommunications sector. It was a curious irony that Premier Margaret Thatcher, a reluctant European, was one of the primary catalysts to change, encouraging competition and removing the sector from the public purse.

The British commitment gave additional resolve to the Commission, one determined to liberalise telecommunications across the continent. The Green Paper on telecommunications highlighted what the Commission considered was the cost of ad hoc and inconsistent policies dictated by uncoordinated and rival Member States.

It claimed that Europe was lagging in information technology and had antiquated regulations which suppressed innovation. The Commission was to regularly monitor the continent's progress on the elements outlined in the Green Paper on telecommunications, exerting pressure on the Member States to come into line. "Developing Europe's telecommunications infrastructure into the 1990s will prove central to achieving the full benefits from completing the internal market, to improving Europe's position in global economic competition, and to strengthening Community cohesion--constituting priority Community goals reaffirmed in the Single European Act" (7).

The report confirmed the Commission's intent. Information, it maintained had become a key ingredient to prosperity and growth. Information was the key to an emerging, if not burgeoning service economy embracing industry and commerce. This highlighted a number of key issues and determined that the continent develop an economic profile devoid of insular practices that had once protected indigenous suppliers and manufacturers. "Trade is the lifeblood of the European economy. The European Commission estimates that between 10 and 12 million jobs--the equivalent of one job in 10--depend directly on exports. And these exports, which go to every country under the sun, provide 9 % of the Union's wealth, as represented by its gross domestic product" (8).

Curiously, it was the multinationals which had recognised Europe as an entity, long before many Europeans were able to grasp the concept. Multinationals, owned by the Japanese, Americans and a few Europeans, straddled the continent employing thousands and contributing substantially to local, regional and national economies and forcing the pace in developing a transcontinental telecommunications infrastructure.

> The innovative firm must rapidly exploit the advantage of a new product or process by widening its area of operation, through internationalization and international alliances. This helps us understand why an increasing number of firms, even of small and medium size, are now becoming multinational. . . . the time available to take strategic decisions is becoming shorter, while the geographical and sectoral area of operation is becoming ever wider, up to global dimensions.(9)

That trading world is no longer the province of the traditional multinational whose ambitions have never been constrained by national boundaries. These new international companies do not have satellite offices or a mere token presence but foreign networks of distribution, manufacture, marketing, research/development and customer support--the entire range of business. Nor is it peculiar to any one sector. Finance, retail, manufacture, food, fashion, travel and dozens of others have a global profile and need it to survive. Even those companies which barely five years ago would have been incapable of thinking in international terms are changing their perspective. Additionally, the

European Single Market where trade barriers were beginning to be dismantled in 1993, has changed the continent's psyche.

A "Fortress Europe," once favored by a few, has been replaced by a continent where competition is the mainstay of industrial policy. No high walls are to protect European industries from the real world or from each other. Businesses and industries, which have enjoyed national protection, now because of the nature of world trade are exposed to the competition of the global marketplace. A new political wave is sweeping across Europe. Business, once contained in separate and jealously guarded territories, has a new horizon, bigger and perhaps more frightening than any in the past. The rules have changed. Those first steps towards encouraging that change were taken by the Commission which remained determined that a new industrial climate must be in evidence by the beginning of 1993.

> The feature that best characterises Europe today from the standpoint of its economy, business, technology and capacity for innovation is its definitive emergence from the "Euro-sclerosis" phase of the 1970s and the early 1980s, and the way it is gearing up and closing ranks to challenge global competition in the 1990s. The Single Market offers a golden opportunity to free resources imprisoned behind the barriers still existing in Europe. The price of the Community's failure up to now to work as a truly single market has been estimated at some 200 billion ecu.(U.S.$350 billion, value of ecu varying between U.S.$1.3-1.5) . . . and 2 million fewer jobs.(10)

But much has to be done to create the conditions in which that integrated market can develop. Transport and energy will be at the forefront of that change as well as telecommunications. The EEC believes telecommunications networks will be the principal contributors to economic growth (11).

Europe's enterprises which compete in that global market, not only depend on information but on quick, efficient and cost-effective ways of exchanging it; packaged, processed, filtered, managed, interpreted but, above all, at hand. Information and the channels which transmit it are the lubricants of industrial and commercial expansion.

But in Europe, telecommunications policy has been inhibited by those who consider competition to be an uncontrollable force and fearful that an unbridled telecommunications market would fall prey to technological imperialists from America and the Pacific Basin.

The proponents of change believe that technology, itself, is the imperialist, not its trader. It is ruthlessly driving production lines to tight margins, forcing down the prices of transmission and distribution, and stimulating global trade. Without advanced communications, where vital commercial and financial information can cross the continent in seconds, European business will never be capable of performing on the international stage, says the Commission, and that Europe's industrial competitors will not be shackled by such constraints.

But the continent's telecommunications authorities are not keeping pace with that demand. They have been slow to promote efficient pan-European telecommunications which could match those in Japan or America and have even used their networks to fund unrelated activities.

> In 1990 Deutsche Telekom had to make a contribution (above and beyond normal taxation) of DM 4 billion (U.S.$2.5 billion) to the German government. It had already paid out almost DM 2 billion in compensation following its separation from the Post Office and bank. . . . France Telecom has been subject to similar pressures, most notably in terms of supporting ailing French high-technology companies. A levy by the French government doubled its tax bill in 1991 to FFr 14 billion (U.S.$2.4 billion).(12)

European telecomunication users, like their equivalents in the United States, have become more 'technically literate', informed and consequently more demanding of the technology and the services (13).

But in Europe many businesses believe they are paying a penalty for cross-frontier trade, a barrier which was supposed to be eliminated by the Single European Act. But, the supposed barrier-free Europe is still saddled with diverse telecommunications policies and the authorities whose response to customer needs is often considered sluggish, uncommercial and bureaucratic. Business users generate approximately 50% of the PTTs' revenue, account for 80% of their profits and are (in financial terms) the single most important customer base (14).

These businesses are not just critical to the financial health of the PTTs but to that of their respective national economies. But what is more significant is that Europe, increasingly, is becoming more dependent on telecommunications (15).

Some radical change is in order, claims the Commission, not mild adjustments over long periods, but policies which will allow Europe's Member States to do battle with the giants from other continents. The latest free trade agreement between the USA, Canada and Mexico effectively has divided the world into three competing trading blocs- North America, Japan (and Pacific Basin) and Europe. For Europe to compete, the EEC believes, it needs to be forceful and innovative (16).

Europe's telecommunications policies must reflect that vision, insists the Commission, with networks which are efficient and as economic as those of its competitors whose commitment to high technology has been well documented. "Administrations must start thinking globally about their telecommunications needs and interests. New technologies compress time and distance. They force a global outlook on commerce, politics and society" (17).

The Commission now believes that a Europe with more than 325 million people and U.S.$5 trillion GDP, representing 20% of the world, (18) cannot afford to do otherwise.

An Evolving Europe in Telecommunications

"Europe's diversities are by no means all unfortunate. On the contrary, they represent a wealth of culture, of varied approaches, of enterprise and creativity that, if put to good use in an extensive market, can become levers for extraordinary development"(19).

That diversity has helped some of Europe's industries carve substantial shares of the world market in numerous sectors. Chemicals, pharmaceutical, engineering - electrical, mechanical and precision - automobile, heavy goods vehicle manufacture, food processing, cosmetics, textiles and clothing all have a European presence. New high technology joint ventures, such as the Airbus and Ariane, have been forged and bear witness to Europe's willingness to challenge the best on a world stage.

Europe's industries have created industrial partnerships across the globe too. Philips' ventures with AT&T, RCA, Motorola and Matsushita; Siemens with GTE, Fuji and Toshiba; Olivetti with AT&T; and the relations Thorn-EMI and GEC(U.K.) have with the Japanese and the Americans are examples of industrial versatility (20). But many of these European companies have not been allowed access to the same telecommunications facilities as their overseas partners.

But how far should the measures, outlined in the Green Paper on telecommunications, be taken and at what speed? Both issues were the subject of much lobbying and, for the first time, the telecommunication authorities were on the defensive.

Conversely, European industry was on the offensive. En masse it complained about predatory pricing, restrictions on usage of leased circuits, the lack of cohesion across the continent and of an arrogant complacency which treated them with derision (21).

They added that the construction of pan-European communications networks was vital for accelerating market unification in Europe and an Information Society, that lack of coordination between the authorities meant that there was no mechanism for creating a continental network, that it took these agencies four times as long to get such a line than it did a domestic one and at a price that was up to four times the respective national one (22). "Those whose daily business straddles Europe's national boundaries feel that in many instances they are paying too much for a cumbersomely administered transnational service"(23).

But the task of molding the Member States into one cohesive unit with a network, which would be the adhesive for the social and industrial structure, proved elusive. Without it, the political hierachy claimed, the Single European Market would remain unattainable. The promise and the benefits of a Europe without barriers would also never be realised; that goal needed an efficient trans-continental telecommunication network too.

But change had its opponents. In West Germany and in France, workers in the telecommunications authorities expressed their fears that excessive liberalization threatened further job cuts on top of those expected to be shed with the introduction of new equipment (24).

The Commission chose to progress with caution. It concluded that the basic network in each Member State was still to be provided by one operator and those operators, guardians of Universal Service (telephone in every home), would have certain privileges safeguarding their financial viability. But at the same time, the Commission determined, tariffs must be reduced and move towards cost while a timetable for competition needed to be agreed. "Tariffs which are not cost-related are therefore an obstacle to the growth in international telecommunications traffic and a brake on the expansion of the European economy" (25).

The Commission was walking a political tightrope. How best to encourage the vital growth of telecommunications while simultaneously preventing any erosion of the benefits currently enjoyed, including the sensitive area of Universal Service?

The European Round Table of Industrialists, comprised of industrial leaders from some of Europe's major companies, was candid. They called for a Reshaping of Europe. "The full economic benefits of the larger European market cannot be achieved unless the communications infrastructure itself is re-designed in the broadest sense to provide 'highways of communication' for goods, people and information across Europe" (26).

The queues of lorries at the frontiers are only the visible signs of what was wrong, claimed the paper. It added, curtly, that none of Europe's competitors suffered from the disadvantage of having such a disorganised and uncoordinated home market (27).

But the Commission was approaching the issue on another front. It had developed an industrial policy, by the end of 1990, which put Europe's commercial needs into context. Simply, the new Europe which wished to exploit the benefits of a Single Market, needed a backbone and an infrastructure to be comprised of the continent's highways--transport, energy and telecommunications. Each one would need to be modernised.

Significantly, this new approach to industrial policy, as the Commission claimed, pushed the development of market competition (28). In effect, the political agenda would be set by the priorities and the response of the marketplace, and supposedly free the Commission to pursue them. The appropriate articles in the Treaty of Rome (articles 90,85&86)(29) would be used to ensure that the proper competitive climate prevailed. The new policy would eliminate subsidies where the results were to prove uncompetitive and place the onus for expansion on the private funds of industry. But while industry shouldered that burden it cried for support from a new infrastructure. "The main responsibility for industrial competitiveness must lie with the firms themselves, but they should be able to expect from public authorities clear and predictable conditions for their activities"(30).

So, the new policy acknowledged that Europe's companies were fighting for a place in a world market, that the Community had to compete with other locations to attract international business and that non-European companies must be given a fair chance to compete in the new Single Market.

That declaration had a significant effect on telecommunications policy. The Commission, already committed to monitoring and curbing the power exercised by the monopoly telecommunications authorities, wanted a consistent economic strategy to embrace all sectors in the Community.

Some telecommunication authorities have created separate companies to try and offer pan-European services, conducting the complex negotiations in each country on behalf of their clients. In reality, apart from offering a facility whereby client are billed from one source, they invariably are powerless to negotiate any better terms and conditions.

> When a service provider is attempting to convince potential customers to place the future of their international networks in its care, it is vital for it to be able to demonstrate breadth of geographical coverage. Multinational organizations need reassurance that there will be on-the-spot support from qualified staff--with the relevant linguistic skills--if they have a problem. . . Good geographical coverage is not something most TOs would claim to have outside their home markets, except through the established international telephony network.(31)

The Forces of Law

"As long as telecommunications could be seen as a small club, run by and for the world's national telephone monopolies and having little impact on the rest of the world economy, the ITU (International Telecommunications Union) with its ponderous four-yearly cycle of standardsapprovals and seven-yearly cycles of meetings could be left to its own devices. In a world in which telecoms is seen as an increasingly vital strategic asset, this is not good enough" (32).

The demands now made of Europe's telecommunications authorities are substantially different than those when the industry was in its infancy. While the telephone has always played a significant part in the expansion of business, the arrival of microelectronics, digital transmission and the marriage of telephone and computer technologies effectively ensured that a revolution was in the making.

But in Europe that transformation was never recognised as quickly as it should have been partly because the technical skills required to spot the symptoms were not resident in government. Ironically, government could only seek the advice from the very organs it sought to change. Consequently, it has taken some time for the powers in Europe to adopt a more independent line and to understand the implications of poor trans-European communications.

> When the CEC (Commission of the European Communities) consulted the Member States about its proposals for telecommunications policy, the expert representatives they put forward were inevitably drawn from the TOs with entirely predictable results. The TOs were presented with not one but two direct lines of communication to the Commission, and they used them to protect their dominant position.(33)

By May of 1988, the Commission had issued a Directive opening up the terminal equipment market and by December of the following year, with support from the Council of Ministers, competition was introduced into the services market. Resale of data circuits would be allowed from January 1, 1993. Those authorities with undeveloped data networks could apply for a 3 year extension. Not surprisingly Spain, Portugal and Greece did. But those involved in such resale could only use lines leased from the telecommunication authorities (34), and were obviously constrained by the type, quality and availability of what was on offer.

Again the Commission had sought an evolutionary rather than revolutionary approach. But there were many in industry pushing for revolution with the belief that the growth of every other sector in the economy was being held hostage to telecommunication agencies which had no track record in dealing with a real competitive world.

The Commission now appeared more comfortable in independently assessing the value of telecommunications and adopted its own approach, competition. The telecommunications authorities were pledged special privileges but where they were abusing their monopoly, the Commission remained determined that they would be subject to the rigors of competition law.

> It is an important provision of the Treaty and is at the one time both permissive and limitative. It clearly establishes that there are limits to the extent and nature of the rights which can be reserved. Member States may not enact laws nor keep existing laws on the statute books if they are in any way contrary to the Treaty rules. Moreover, it goes on to declare unequivocally that the Treaty's competition rules apply to all undertakings entrusted with a service of general economic interest. (35)

A report on the Perspectives on Advanced Communications for Europe (PACE) published by the Commission in 1989 was overt in its criticisms of the deficiencies. It was a time of profound change in international business and technology, said the study, when telecommunications had become an essential feature of economic growth yet the continent's intra-European telecommunications, regulations and implied legal infrastructure seemed incapable of responding (36).

PACE further concluded that a legacy of uncoordinated national regulations had severely limited the development of European telecommunication services. The growth in computing capacity, which had overtaken even the most optimistic forecasts, ensured a growing mismatch between what was required by business and what could be supplied by the telecommunications agencies. Telecommunications, the report maintained, would need to match the explosion of desktop computer power by the mid-nineties (37).

By the end of 1989 the European IT Industry Round Table, a lobby group for the electronics sector, had published its ideas about forming a limited trans-European network. Called the European Nervous System (ENS), it would attempt to link the previously disjointed national networks. The Commission had a similar plan, the Transport-European Network (TEN). Both were tailored networks where specific information could be easily exchanged facilitating the growth of the Single Market--air traffic control, customs and excise, freight and the like.

The following year the Commission was bluntly conceding these networks (and others which professed to have a trans-continental profile) had serious flaws. It reasoned that they had been designed as national networks but that different technical standards, regulatory frameworks and tariff structures, missing links and bottlenecks made it "difficult to operate genuinely trans-European networks" (38).

To assist in liberalising data communications a set of rules was devised by the Commission, which outlined the standards, tariffs and conditions for the provision of leased lines, that would better facilitate cross border communications. The guidelines called 'Open Network Provision' (ONP) were to assist companies in acquiring trans-continental lines from one source, prevent any discrimination, and ensure proper disclosure of costs. And although the lines were still be leased from the PTTs, France, Italy, Spain, Belgium and Greece were openly opposed to it and vehemently defended their territories (39).

> Customers complain that today it is next to impossible to order lines that cross European national borders from a single source because each member country controls those lines in its own territory and applies its own rules. Even within national boundaries, telecommunications organizations are inconsistent and sometimes unreliable in providing large capacity lines to users. (40)

It has become obvious to many in industry and the Commission that the cross-frontier carriage is accompanied by an assortment of problems, more political than technical. Not surprisingly, ninety percent of telecommunications traffic in Europe is within national boundaries (41).

Article 90 of the Treaty of Rome gave the Commission the legitimate authority to force the pace. This article allowed the Commission to police competition; an interpretation upheld by the European Court of Justice after France, Italy, Belgium and Spain challenged the Commission's directives on terminal competition. The Article declares that the Member States shall not enact any measure contrary to the rules contained in the Treaty (42).

That decision by the Court of Justice (1990/1) was a watershed. The Commission could, whenever necessary, resort to Article 90, to establish competition (43).
Europe had taken its first steps towards an Information Society. France, Germany, U.K. and Italy together account for some 75 percent of the continent's telephone lines, approximately 100 million. The new 15 member EEC is expected to grow even larger to include the 100 million plus from eastern Europe (44). So, the Commission's strategy for its Information Society, it maintained, needs to create a climate which will stimulate economic growth across a vast region, which will encourage pan-European advanced communications and which will attract the investment needed to make that possible (45).

A European Frontier Tax

While the inefficiency of telecommunication networks has been a major complaint of industry, the disparity in telecommunication tariffs between one location and another is also a primary irritant to business, which believes it contributes a disproportionate amount to the continent's telecommunications revenue.

It is a highly complex issue which is guaranteed to invite much emotion from either side of the argument. One side supports a subsidy for residential users while the other demands that charges truly reflect cost.

At the heart of the current system of charges is the Accounting Rate, the amount paid to the respective PTTs to terminate an international call, a substantial portion of what is eventually charged the customer. In all countries in Europe (with the exception of the U.K.) a government agency is the operator, so the rate is effectively agreed between governments.

But the European tariff system is peppered with inconsistencies. Charges in one direction are sometimes multiples of those in the opposite direction and, invariably, bear little relation to distance or the complexity of connection. The respective PTTs have been responsible for setting their tariffs and their charging structures and priorities. There is no European telecommunications regulator or authority which can inspire or insist on consistency.

Since 1968 Europe has comfortably managed these charges through TEUREM (Tariff Group for Europe and the Mediterranean Basin), part of the International Telecommunications Union (ITU). During 1985-91 TEUREM recommended that the accounting rate could be multiplied by an arbitrary figure, up to 1.8, to arrive at the collection charge. Little logic seemed to support this figure and the resulting charges and their differences have bred confusion and hostility among many users (46).

But accounting rates and collection charges have attracted the attention of the Commission, concerned that the significant drop in tariffs on the north Atlantic route and in the US has not occurred in Europe.

A three minute call intra-Europe is often nearly three times the equivalent distance within a national boundary at peak time, and 5-6 times off-peak. Also off-peak national price reductions can be as much as 70 percent whereas those for intra-Europe are little more than 33 percent (47).

Although during 1985-91 the EEC countries made adjustments so that the collection charges from one Member State to all the others would be the same, there are still astonishing anomalies (48). Examples from a recent press report best illustrates these disparities.

> The heaviest burden Europeans bear as a result of the continent's fragmented networks is the price of long-distance calls. A three minute call from Boston to Washington DC--a distance of about 650 kilometers--costs the user 69c at peak rates, says the consultants Logica. But a call from Paris to Milan, about the same distance, costs U.S.$2.08, nearly three times as much. One from Milan to Brussels, again the same distance, is four times as much--U.S.$2.94. At off--peak times, the

> disparity is even greater. Although crossing frontiers is particularly expensive, long distance calls within one country are also costly by U.S. standards.(49)

In many instances savings, resulting from advances in technology, are not being passed onto the user. Industry and the Commission want transparency of costs and cost related tariffs. The disclosure of true costs, the Commission believes, would ensure that any subsidy would be overt. According to the OECD, competitors and customers are entitled to such information in a competitive market. And that would be a necessity for a competitive integrated Europe evolving into an Information Society (50).

In Europe that would mean public disclosure of accounting rates, to establish the cost-base on which the authorities are working. But, traditionally, these rates have been kept secret and, since controlled by government, they have been used to subsidise the exchequer, to repay government loans or to offset the cost of residential telephones. Such tariffs are considered, by the Commission, to be a major obstacle to economic growth (51). These tariffs were also preventing the growth of trans-European networks, it further concluded, another fundamental ingredient in an economically expansive Europe.

But to some, the money paid via the accounting rates is an acceptable transfer of social funding. Since the shortfall is on the side of those wealthier countries, which generate the calls, the system benefits the poorer nations. But the Commission has sought to reconstruct its entire telecommunications policy, accounting rates and all, to create a continent encouraging industrial growth in every location, even in those previously starved of investment. It remains determined to develop a European-wide strategy which must involve more than patching existing national structures together. It maintains that a different approach is needed since some of these States do not have sufficient network capacity to even satisfy their national needs.

But here is a political dichotomy. To fund the universal expansion of telecommunication facilities, high tariffs have been paid by business. Currently, the system creates more money nationally than internationally. Just over half of the international traffic generated by the Community (about 10 percent of all traffic) is destined for another Member State. The value of that intra-Community traffic each year is estimated to be worth about U.S.$7 billion. But the net surplus is only about U.S.$ 120m (52), a relatively modest amount. The gross monies are paid in real cash by Europe's industry and commerce which the Commission considers a serious and unnecessary financial burden. More importantly, the cost of intra-European telecommunications, the EEC contends, is prohibitively expensive inhibiting trade and society in the process.

The political dilemma is stark given the poor regions in Europe and the commitment to provide a cohesive telecommunications policy for the new Information Society. Namely, any new system which abolished or revolutionised the current one would need to accommodate that shortfall, felt more by the poorer regions than any other. "Continuation of current support for the peripheral regions of the Community will be needed to allow for these regions to catch up and remain in step with the increasing market expansion"(53).

Clearly, given that telecommunications will make the Single Market both commercially and socially cohesive, any policy must ensure growth without destroying the current system. And, given that such policies must allow equal access to all, any new operator seeking inter-connection, might still need to contribute to a supportive fund - access charges, commonplace in the United States. So, even the new Europe may not dispense with its frontier tax.

A New European Perspective

But geographical frontiers, their trade and political barriers need to be dismantled to unite Europe properly, believes the EEC. Any semblance of frontier taxation must be abolished and telecommunications needs to be efficient and the policies which govern it consistent.

The major telecommunications users and the Commission consider that without a modern infrastructure the promise of the Single Market will never be realised. Emerging from that unity would be a continent where business and society will flourish in a freer environment.

Without improvements in the telecommunications infrastructure the information which modern business needs cannot cheaply and quickly be tapped (54). This communications infrastructure is also a fundamental element in the Single Market goal.

Namely, that the benefits of the continent will be shared and that there will be no disparities among member states.

The European Commission's Green Paper on telecommunications had set the political agenda. By that time the British had privatized its telecommunications. France, as expected, preferred a different route. Massive government investment in electronic terminals launched Minitel, one of the most successful electronic publishing efforts. It catapulted the French, in 1987, into the future. Thousands of terminals were given away free, originally meant only to contain telephone directories. But in this project, whether unwittingly or not, France had created a network which would be a modest forerunner to any information superhighway, a network for the Information Society. Now, the system has nearly 7 million subscribers (6.5 million Minitel terminals and 600,000 microcomputers), 23,500 services, makes substantial revenue for France Telecom (and the French government), has links across the continent--Italy, Germany, Luxembourg, Portugal, Denmark (1990); Andorra, Switzerland, Spain and Ireland (1991)--and its technology is sold in the United States by U.S. West and Southwestern Bell (55).

So, the French government's control and monopoly, a partnership considered to be an obstacle to innovation had considerable success. The public purse funded the supply and installation of the equipment, estimated to have cost France Telecom in excess of FFr5,000 million (U.S.$ 1.5 billion) on equipment and software. It returned a profit in

1994 and is expected to be financially independent of France Telecom in the very near future (56).

Despite the Commission's pressure and its Green Paper on telecommunications, trans-European networks still depended on lines leased from the establishment. This obstacle highlighted the deficiencies in Europe compared to its major industrial competitors and highlighted the obstacles to change.

> The size of the gap between the U.S. and Europe is substantial. The data communication market represented a full 20 percent of U.S. carrier revenues in 1989. This market is estimated to have accounted for only 5 percent of European PTT (Post Telegraph and Telephone) in the same year. In the U.S. the volume of traffic generated by the expansion of advanced business services . . .has resulted in the increasingly extensive use of broadband communication.(57)

Europe now demands more from its 'plain old telephone' system and telecommunications. More than two dozen countries around the world are poised to privatize and/or liberalise their telecommunications markets as a way of introducing more efficient and cost-effective communications, drives towards their information-based economies (58).

Alternative networks, supported by private finance and expertise are supposed to assist in the expansion of the Community's economies. There would be identifiable benefits, the proponents claim.

First, the PTTs themselves would share in the wealth of the newly created broadband communications market, through inter-connection or access charges, similar to the system used by the local telephone companies in the U.S.. This would be a valuable source of income, for all regions, so helping the Community attain Universal Service.

Second, a more competitive environment and new telecommunications services would further drive the information economy.

> As a consequence the Community's telecommunications services market (90 bn ecu in 1990) would nearly quadruple over the next 20 years, with a broad range of new services rapidly emerging, in particular advanced voice, video, data. . . . The continuation of current policies would result in relatively moderate growth of 3-4% on an annual basis and a mere doubling of the market in real terms by the year 2010, leaving the Community market far behind those of United States and Japan.(59)

Third, it is considered that a pan-European network program would be a boost to the continent's telecommunications equipment market.

Fourth, information has potential to be an industry in its own right, generating new wealth. But it needs networks to transmit its data across the continent.

Fifth, such projects would provide the infrastructure for the Information Society.

The supply of information in electronic form is becoming a major sector of advanced economies. In 1988, the global turnover for online database and real-time information services accounted for around 7 bn ecu (U.S.$9.1bn), with a share of around 2 bn ecu(U.S.$2.6bn) for Europe. "With an average growth rate of more than 20% per annum for online services and the emerging market for new forms of delivery. . .

observers predict a world market of up to 100 bn ecu(U.S.$130bn) for the whole electronic information services industry by the year 2,000" (60).

A Europe without trade barriers or national boundaries, encouraging the free flow of goods and services, is expected to be an important step in developing a market where economies of scale can be exploited, thus increasing demand for Community-wide information services.

But now the Commission has moved a stage further, tailoring a telecommunications policy into one which will blend its diverse Member States into one Information Society. In its study Growth, Competitiveness and Employment , it measured the economic worth of the sector - services ECU 285 bn (U.S.$370bn) worldwide and ECU 84 bn (U.S.$109bn) in the Community; equipment ECU 82 bn (U.S.$106)and ECU 26bn (U.S.$33bn) respectively.

The report prepared in 1993 and presented to the European Council in the December of that year highlighted the areas which would need improvement if the continent had to move toward creating an infrastructure for transcontinental communications in the Information Society: high-speed communications networks, digital networks, electronic access to information, electronic mail services, interactive video services, teleworking, education and training (61), telemedicine services and networks. The European strategy was to embrace and encourage trade, a major economic artery, and also to ensure social cohesion among its diverse cultures and languages.

The Council requested further study. A group, headed by Information Technology and Trade Commissioner Martin Bangemann produced Europe and The Global Information Society concluding that the continent needed to foster an entrepreneurial mentality to encourage the emergence of new dynamic sectors of the economy (62).

The report, which also endorsed the Commission's drive for full liberalisation, was submitted to the European Council at its Corfu meeting in June 1994. The Council was sympathetic, although France and Germany, were reserved about opening telecommunications markets particularly to non-Europeans.

But the political momentum was mounting and, albeit with reservations, the Commission was accumulating support. The Commission produced its blueprint Europe's Way to the Information Society:An Action Plan, the following month (63).

By the spring of 1995 the Commission had prepared its timetable which demanded full liberalisation of telephony by 1998. These measures would release forces, the Commission maintained, which would produce a Europe free from the shackles of the PTTs, inject private capital into the infrastructure while preserving the priorities of a continent committed to social cohesion--telephone and cable would be integral parts of that strategy.

The European approach to developing an information strategy goes beyond creating an economic and technological infrastructure. The EEC's idea of its Information

Society reflects its desire to find a balance between economic and social needs of the Community (64).

The G7 conference in Brussels in February 1995 added another dimension (see Chapter One). The agreement which had accrued from the Naples summit of 1994 had determined that another be staged, this time in Brussels the following year, to confront the problems of a Global Information Infrastructure (GII), the international version of the Information Superhighway (National Information Infrastructure, NII). "It is clear that an international approach should be adopted. The United States, Japan, Canada, and the EU have all launched information society initiatives. Their goal is to connect people, businesses, schools, universities, libraries, hospitals to a worldwide network which will be part of a Global Information Society" (65).

Here, there was dissent from a supposed united Europe. While not serious enough to cause any major disruption or unmanageable disharmony, certain Member States insisted on a social dimension to Europe's information policy. Led by France and Italy, they were concerned about being swamped by American culture--given that the computer industry is dominated by English and U.S. technology. Even the Canadians expressed their reservations. "We believe that linguistic and cultural diversity of content is in everyone's interest. Governments must retain the flexibility to promote diversity. This flexibility means opening our doors to content from around the world while ensuring that local creators have access to their own markets and the global markets" (66).

But the political momentum was maintained. The European Commission's Directorate General on Information, Communication, Culture and Audiovisual conducted its own survey to gauge the public response to the technology and the Information Society. The Finns, Danes, Swedes and the Dutch dominated the national groupings as the most knowledegable, as did men, the young, the formally educated and the professionals.

Other results from the same survey reflected the cultural priorities of Europe:

Thirty-five percent would be willing to subsidize new information services;

Twenty percent considered new information and communication techniques would be needed to enhance social cohesion;

Fifty percent of the people from the Southern European Member States, generally considered less developed than their Northern neighbors, thought new information technologies would reduce the gap between them;

Eighty percent felt regulations and laws were needed to guarantee the satisfactory development and functioning of the Information Society, except in Germany and Austria where only one in four thought regulation necessary (67).

International managment consultants Coopers & Lybrand conducted a similar survey, this time among executives in the U.K., France, Germany and the Netherlands. Acccording to the survey, many executives are sceptical about Europe's capacity to match major competition, particularly the U.S. Much is blamed on the conservatism of

European business, the diversity of cultures and the high cost of telecommunications networks. "The majority of respondents, however, see the U.S. and Japan as being ahead of Europe in both exploiting multimedia applications and developing the information superhighway. 66% of respondents perceived the U.S. as being ahead of Europe and 38% feel that Japan is ahead" (68).

On the trade front the Commission, like the United States Trade Representative (USTR), has been particularly active. The GATT (General Agreement on Tariffs and Trade) rounds of 1994 suspended negotiations on telecommunications to allow the ratification of the main agreement. The World Trade Organisation (WTO) which has replaced the GATT framework has been the forum for the relevant parties to reach a settlement by April 1996. By its early response, the EEC has demonstrated its commitment to changing the profile of its telecommunications.

> The European offer is based on a Resolution by the Council of Ministers of June 13, 1995 on the creation of a future regulatory framework for telecommunications. The Resolution is tailored to a liberalised market, but provides exemptions for some Member States. The EU countries have undertaken to liberalise the sector completely by January 1, 1998. . . . There will be no further restrictions on market access after January 1, 1998 in any EU country except for Ireland, Greece, Portugal and Spain. In Ireland, these restrictions will be lifted on January 1, 2000 for nearly all sub-sectors, and in Portugal, Spain and Greece on January 1, 2003.(69)

The Commission is also pushing France Telecom and Deutsche Telekom toward its privatization goal of 1998. But there are serious political probems in France which have emanated from a vacillating government and strong unions in France Telecom, opposed to privatisation. Most of those fears center around layoffs which have been extensive in British Telecom since privatisation and AT&T in the United States since divestiture.

* British Telecom which employed 253,000 will have slimmed its workforce to 100,000 within the next ten years (70):

* At divestiture on January 1, 1984, AT&T had 372,716 employees. By year-end 1993, AT&T had 308,700 employees. The company reorganised into three major groups last year and announced a further 40,000 redundancies (71):

* For its part, Deutsche Telekom has been under the same pressures. It has reached an agreement with its workforce to cut 60,000 jobs to 170,000 by 2,000 (72):

But the political wrangling has caused France Telecom to delay its stock offering. Given the legislation that is needed to authorize the sale, it seems likely that it might miss the Commission deadline of 1998. The French financial sector also fears the Germans will privatize just before, flooding the market with its share issue (73).

The Commission also has the power to approve, or not, corporate alliances and interpret whether they are consistent with its Information Society policy. France Telecom and Deutsche Telekom were the subject of such an adjudication over a proposed joint venture data network. France has negotiated with the Commission, claiming willingness to extend liberalisation of telecommunications services in a bid to meet EU objections to this Franco-German joint venture. The Commission has also insisted that the venture, called Atlas, and another which couples the partners with the U.S. company Sprint (an alliance called Phoenix) create an accounting structure to prevent cross-subsidy.

France's Telecommuniciations Minister Francois Fillon is also allowing owners of alternative networks such as the state SNCF railways and electricity grids to carry traffic over their lines for operators of mobile networks. But the step does not include the main telecom services of terrestrial voice telephony, a sector not open to competition at present (74).

Internet in Europe

The Internet has made substantial inroads into Europe. Eunet, one of the principal backbones of Europe's Internet began in 1982. Like the Internet in the U.S., it was established as a vehicle for the transfer of research data. Now, it has centers in 27 countries in Eastern and Western Europe and North Africa. The early development of the network was supported by major academic and research institutions including the Institut National de Reserche en Informatique et Automatique (INRIA) in Paris, the Royal Institute of Technology in Stockholm (KTH), the University of Kent at Canterbury, the University of Copenhagen, the University of Genoa and the Center for Mathematics and Informatics (CWI) in Amsterdam (75).

Europe's Goals

The Commission has its sights on expansion and competition of the European cable television industry.

In the U.K., the industry had a poor start in the early 1980s. The numbers are still modest, some 1 million subscribers, but according to the British Cable Communications Association's (CCA) expected to rise to seven million by the end of the decade. That means an investment of U.K. Sterling 10 billion (U.S.$15 billion) on network development, creating 25,000 jobs in the next four years (76).

Cable is destined to play a significant part in the infrastructure of Europe's Information Society where the technology will also be used to carry telephony. But the industry has shown a marked reluctance to invest, unless given more latitude to offer other services. At the end of 1994 there were a total of 60 million homes wired in western and central Europe. That is expected to increase to 63 million by the end of next year. Germany (60 % homes) and the Benelux countries (Belgium, Luxembourg and The Netherlands) (90% homes) have the highest concentration (77).

The latitude cable seeks is telephony. The launch of European wide cable telephone services could create 25 million new lines, U.S.$9.7 billion in profits and generate 200,000 jobs by 2005, predicts the CCA. It adds that profits from the provision of video alone will double to U.S.$26.2 billion in the next ten years with total number of European cable subscribers rising by 40 percent to 56 million (78).

The European principals, at least those in the Commission, are committed to a major change in the control and operation of the continent's telecommunications - data, telephony and cable. That strategy of liberalizing its markets is a domestic policy for each of the Member States but an international one for the continent as a whole. The policy which has both economic and social dimensions is meant to curb the abuses of the past, encourage a free flow of information across Europe, and assist in the liberation of the other industries currently smothered by trade barriers. But the Member States are still suspicious of opening telecommunications markets to foreign competition particularly that from the U.S. In the EEC only the U.K. and Sweden have approaches consistent with that of the U.S.

The Commission has determined that by 1998, telecommunications will be out of the public sector as evidence that the old practices are gone and that expansion and improvement is planned. Also, by January 1, 1996, the EEC wants utilities (water, electricity, etc.) to have the rights to use their networks for commercial use. The networks can be used for data transfer or transactions, not telephony. Two years later, companies will be able to erect their networks. Waivers of up to five years have already been granted Portugal, Spain, Ireland and Greece, where the telecommunication networks are considered to still be at an embryonic stage.

The Commission has also been pushing its Member States to exploit cable and to see extensive networks in place by 1998, ready to carry telephony as well as video. Belgium, Luxembourg, Holland, the U.K. and Scandinavia have been investing in the technology extensively. Currently only the U.K. and Scandinavia allow telephone on cable.

But the reality is that most European Member States (with the exception of U.K. and Sweden) are reluctant to allow unbridled competition, particularly in switched telephony. Substantial sums of foreign currency are enjoyed by these governments through telecommunications. But even with these reservations, the European PTTs once insular and successful in maintaining the status quo are making preparations for change, albeit cautiously, to lay the foundations for Europe's Information Society.

The next chapter will examine how the U.S. is committed to an information based economy and how it is exploring and developing a strategy to create its Information Superhighway.

Notes

1. European Economic Community. Growth, Competitiveness, Employment: The Challenges and Ways Forward into the 21st Century. Brussels: EEC, 1993. n. pag. Online. WWW. http://www.echo.lu/eudocs/en/wpaper/contents.html. 10 Sep. 1995.

2. The 15 countries of the EU - France, Germany, Italy, Finland, Denmark, Sweden, Belgium, Luxembourg, the Netherlands, Spain, Portugal, U.K., Ireland, Greece and Austria.

3. The Social Charter was to create the infrastructure for education training, movement of labour, collectivebargaining, worker representation, participation, minimum

wage, health and safetystandards, length of the working week, rights for women, minorities, the elderly, and the handicapped.

4. Dixon, Bill. Summary of Maastricht Treaty, European Community history. n. pag. Online. WWW. http://ccme mac4.bsd.uchicago.edu/DSALit/Maastricht.html. 20 Oct. 1995.

5. Dixon n. pag.

6. European Economic Community. Green Paper, On the Development of the Common Market for Telecommunications Services and Equipment, Summary Report. Brussels: EEC, 1987. n. pag. Online. WWW. http://www.polity.org.za/govdocs/green_papers/telecomms.html. 12 Jan. 1996.

7. European Economic Community. Report on the State of Implementation of Green Paper on the Development of the Common Market for Telecommunications Services and Equipment. Brussels: EEC, July 1991. n. pag. Online. WWW. http://www.polity.org.za/govdocs/green_papers/telecomms.html. 10 Dec. 1995.

8. European Economic Community. The European Union and World Trade. Brussels: EEC, 1995: 3.

9. Colombo, Umberto. Managing Technological Change Scenarios for Change in Europe, International Herald Tribune/J. Walter Thompson Conference, Lifestyle 2000. Rome: JWT, 2 Nov. 1989: 6.

10. Colombo 9.

11. Colombo 9.

12. Ablett, Susan, and Johnson, Graham. Strategies for Global Networks, European Telecommunications. London: Analysys, 1991: 65.

13. Holmes, Bradley. P. United States Efforts to Liberalize, U.S. Experience and Lessons for Abroad, International Communications and Information Policy. Washington: U.S. Department of State, 12 Mar. 1990: 2.

14. Ablett and Johnson 5.

15. Holmes 3.

16. Holmes 3.

17. Holmes 3.

18. Colombo 9.

19. Colombo 10.

20. Dekker, Wisse. Will Europe Recover the Leadership in Technology?- A Challenge. London: PA Technology, 19 Feb. 1987: 14.

21. European Round Table of Industrialists. Clearing the Lines, A Users View on Business Communications in Europe. Brussels: ERTI, Apr. 1987: 2.

22. European Round Table, Clearing the Lines 2-11.

23. European Round Table, Clearing the Lines 6.

24. Taylor, Robert. European Telecommunications Policy, Towards 1992 - The Social Issues, European Research Associates Conference. Brussels: Blenheim, Apr. 1989: 3.

25. Taylor 5.

26. European Round Table of Industrialists. Reshaping Europe. Brussels: ERTI, Sept.1991: 12.

27. European Round Table, Reshaping Europe 15.

28. European Economic Community. European Commission's Communication Industrial Policy in an Open and Competitive Environment (Summary). Guidelines for a Community Approach. Brussels: EEC, 17 Apr. 1991: 1.

29. Articles 85 and 86 of the Treaty of Rome, prohibit anticompetitive agreements. Articles 59 and 60 give the Commission the right to examine how tariffs might constrain a European market. Article 90 prevents the enacting of any law which effectively breaches the spirit of the Treaty.

30. European Economic Community, Industrial Policy 1.

31. Ablett and Johnson 66.

32. Ablett and Johnson 101.

33. Analysys. European Telecommunications, Standards, ONP - Keys to the Open Market, Players in the Game. London: Analysys, 1991: 24.

34. European Economic Community, Implementation of Green Paper 4.

35. Brittan, Leon. Centre for European Policy Studies (CEPS), Competition Policy and Post and Telecommunications. Brussels: EEC/CEPS, 19 May 1992: 1.

36. European Economic Community. Perspectives on Advanced Communications for Europe (PACE), Volume 1. Brussels: EEC, 1989: 5.

37. European Economic Community, PACE, Vol.1 9.

38. Official Journal of the European Commission. Opinion on the Commission Communication on: Towards Trans-European Networks -For Community Action Programme. Brussels: EEC, 7 Apr. 1992: 1.

39. Datapro Research. Telecommunications in Europe. London: McGraw -Hill, June 1990: 8.

40. Hogan & Hartson (Law). European Telecommunications: New Rules on Leased Lines. Brussels/London: H&H, Aug.1992: 1.

41. Datapro 1-2.

42. Bruce, Robert R., Cunard, Jeffrey P., and Director, Mark D. The Telecom Mosaic. London: Butterworths, 1988: 305-6.

43. Brittan 3.

44. Datapro 2-3.

45. European Economic Community, PACE, Vol.1 7.

46. OECD. Working Party on Telecommunication and Information Services Policies, Draft Agenda of the Third Meeting on International Telecommunication Charging Practices. Geneva: OECD, 9 Apr. 1992: 5.

47. Crawley, Richard. Tackling European Tariffs, PNE Tariffs. Brussels: EEC, Apr. 1992: 44.

48 OECD, Working Party 9 Apr. 6.

49. "Towards a single 'phone market." Financial Times 22 Nov. 1991: 18. Online. Nexis. 10 Jan. 1995.

50. OECD. Working Party on Telecommunication and Information Services Policies, Third Meeting on International Telecommunication Charging Practices Transparency in Accounting Rates. Geneva: OECD, 21 Apr. 1992: 2.

51. Brittan, Leon. Communication to Commission, Draft Communication on 1992 Review and Telecommunications Tariffs. Brussels: EEC, May 1992: 3.

52. Crawley 45.

53. European Economic Community. 1992 Review of the Situation in the Telecommunications Services Sector. Brussels: EEC, 20 May 1992: 13.

54. European Round Table of Industrialists. Missing Networks A European Challenge, Proposals for the renewal of Europe's infrastructure. Brussels: ERTI, 1991: 11.

55. MDIS, International Telecommunications Intelligence, Minitel, Chichester: MDIS, 1995. n. pag.

56. MDIS: n. pag.

57. European Economic Community. Perspectives on Advanced Communications for Europe (PACE) , Commission of the European Communities, Volume VII. Brussels: EEC, Feb.1991: 5.

Study group comprised of Technology Investment Partners, Paris; General Technology Systems, London; Consultronique, Paris; Prommer Consultants, Munich; Teknibank, Milan; Palo Alto Management Group, California; Egis, Tokyo; SPRU, University of Sussex

58. Among them Argentina, Mexico, Puerto Rico, Venezuela, Columbia, Brazil, Paraguay, Portugal, Sweden, Ireland, the Netherlands, Denmark, Belgium, Germany, Hungary, Czechoslovakia, Poland, Israel, Saudi Arabia, Turkey, South Africa, Kenya, Nigeria, Malaysia, Singapore and South Korea.

59. European Economic Community, 1992 Review, Services 12.

60. European Economic Community. Proposal for a Council Decision setting up a Programme for an Information Services Market. Brussels: EEC, 23 Jan.1991: 5-6.

61. The U.K. used conventional broadcasting to create a highly successful electronic medium for education -the Open University. More than a million have taken courses on a host of subjects. Since 1992 its has accepted undergraduate students from other European Union countries and elsewhere. In 1994 there were about 5,000 of its students in EECcountries 8,000 taking through agreements with institutions in central and eastern Europe.

62. European Economic Community. Europe and The Global Information Society. Brussels, EEC, 1995. n. pag. Online. WWW. http://www.earn.net/EC/report.html. 12 Jan. 1996.

63. European Economic Community. Europe's Way to The Information Society: An Action Plan. Brussels: EEC, July 1994. n. pag. Online. WWW. http://www2.echo.lu/eudocs/en/com-asc.html. 14 Jan. 1996.

64. European Economic Community. The European Information Society Moves Towards the Future, press release. Brussels: EEC, 28 Feb. 1995. n. pag. Online. WWW. http://www.cec.lu/en/comm/dg22/dg22.html. 1 Mar.1995

65. European Economic Community, Information Society Moves Towards The Future n. pag.

66. Canadian Government. Statement, G7 Conference. Brussels, Feb.1995. n. pag. Online. Nexis. 10 Feb. 1996.

67. Greathouse, Elizabeth. Spirit of Cooperation Prevails, G7. Feb. 28, 1995. n. pag. Online. WWW. http://www.ibm.com/Sponsor/g7live/index.html. 1 Mar. 1995.

68. Coopers & Lybrand. Communication Renaissance - European survey on the information superhighway and multimedia. Dec.1994. n. pag. Online. WWW. http://www.colybrand.com/. 15 Jun. 1995.

69. European Economic Comunity. Submission to World Trade Organisation. Geneva: WTO. n. pag. Online. Internet. 7 Nov. 1995.

70. Grant, Richard. "Labour deal 'to hit 100,000 jobs." Mail on Sunday 12 Nov. 1995: 1. Online. Nexis. 20 Nov. 1995.

71. "Inside AT&T: regulatory developments." Inside Telecom 16 Jan. 1995. n. pag. Online. Nexis. 20 Jan. 1995.

72. "Telecoms." Network Briefing 17 Nov. 1995. n. pag. Online. Nexis. 20 Nov.1995.

73. Edmondson, Gail. "Who's running this company." Business Week 25 Sep. 1995: 25. Online. Nexis. 30 Sep. 1995.

74. Cane, Alan. "Clash of the telecoms titans: regulators in Europe and the U.S. oppose the creation of a Franco-German alliance." Financial Times 2 Oct. 1995: 21. Online. Nexis. 6 Oct. 1995.

75. n. pag. Online. WWW. http://www.lib.ox/ac.uk/internet/news/eunet.html. n. pag. 10 Jan. 1996.

76. Mathew Horsman. "Soft porn channels planned for cable network." Independent. 29 Aug. 1995: 13. Online. Nexis. 31 Aug. 1995.

77. Agence France Presse (Paris/London). 15 Aug. 1995: Financial. Online. Nexis. 16 Aug.1995.

78. Agence France Financial.

CHAPTER 3

THE U.S. COMMITMENT TO ITS INFORMATION SUPERHIGHWAY

This chapter explores the political commitment of the United States to create the infrastructure for its *Information Superhighway*. It also examines the principle of Universal Service. While the European states have a similar commitment, their Universal Service is carried out by government agencies which run telecommunications or by a dominant carrier, like British Telecom in the U.K. Nowhere in Europe is there competition on the level as established in the United States nor is there any structure which ensures the financial burden of Universal Service is shared by the market competitors. The experience of the United States in this area is unique and highlights the complexity of moving to a competitive driven environment while maintaining Universal Service commitment. This is a crucial factor in building the infrastructure for the U.S. *Information Superhighway* and the European *Information Society.*

The remainder of the chapter will look at the changing political mood of Capitol Hill and the Administration which endorse competition, approve the integration of cable and telephony and sanction the corporate mergers which seek to meet those goals. Also discussed in the chapter are the issues which will accompany the *Information Superhighway*--namely security, decency and privacy.

Political Commitment

"We are moving from an Industrial Age built on gears and sweat to an Information Age demanding skills and learning and flexibility" President Bill Clinton, January 24, 1995, State of the Union Address.

The statements made by the U.S. government in its postures on international telecommunications tell of a continent determined to introduce a new wave of competition into its telecommunications industry, already one of the most liberal in the world. They also reflect a frustration that the rest of the world may not keep pace. But more importantly, they are icons of America's determination to create an infrastructure for an information based society (1), an economic environment catalytic to change where competition will be the ethos driving that transition. The industries of cable and telephony will play crucial roles in the development of that infrastructure. Equally as important will be the relationships which each have with each other. Those relationships are as important as the ingredients themselves.

> The United States Government strongly believes that the emerging Global Information Infrastructure (GII) holds significant economic and social promise for all nations and their citizens. Advances in information and communications technologies are transforming societies and markets around the globe by increasing the speed and efficiency, while decreasing the costs, of creating, processing, and distributing information.(2)

This change, the U.S. has determined, will alter the way industries will function, how much growth they can expect to experience and how such advanced communications will be a direct measure of economic expansion and opportunity. That information and its communication channels will be the engines of economic innovation, driving commerce to new horizons and dimensions.

> The United States is one of many countries currently pursuing national initiatives to capture the promise of the information Revolution for their societies. These different national initiatives have at least one objective in common--to ensure that the full potential of advances in information and communications technologies are realized to the benefit of all citizens. (3)

The U.S. approach has acquired substantial support from many of the globe's political caucuses like the World Bank, the EEC (European Economic Community), the OECD (Organization for Economic Coordination and Development) and the ITU (International Telecommunications Union). Substantial economic growth is anticipated in the wake of the U.S. policy which in turn is supposed to drive the economies of the other major industrial nations (see Chapter 1).

For the U.S. to reach those goals has meant the development of a domestic policy, essentially the creation of a telecommunications infrastructure at home. That domestic policy would be translated into an international strategy as the U.S. pushed towards creating a competitive environment overseas. The U.S., inspired by the measures which it had adopted at home, was convinced that the same features which made a domestic policy *'successful'* would be the principal ingredients of any international telecommunications one. Domestic values would be exported to become the mainstay of an international strategy.

In pursuit of that end, Vice President Al Gore, attempted to cultivate international political opinion at the ITU World Telecommunications Development Conference in Buenos Aires, March 1994 (4). The primary elements of the strategy would be to encourage private investment, promote competition, create a flexible and responsive regulatory framework, provide open access to all service providers while ensuring access for all (Universal Service) (see Chapter 1).

The political commitment of Universal Service has been surrounded by as much fact as legend. AT&T had claimed it as corporate policy. But it also appeared to be its justification for purchasing competitors, a policy which brought it to the attention of the Department of Justice, in 1913, and precipitated the first anti-trust suit against the company. The Communications Act, 1934, which had laid the ground rules for the telecommunications era contained a vague commitment to Universal Service.

> The Communications Act specified no single means of accomplishing this goal. It was furthered by the development of a system of internalized cross-subsidies at the federal and state levels. They had as their fundamental objective helping to keep rates for basic local residential service low. In 1949, moreover, Federal legislation was enacted directly to subsidize extension of telephone service in rural areas.(5)

The successful implementation of this element will be the hallmark of a socially equitable policy, particularly difficult in a market with minimal regulation and driven by competition. It was a policy adopted for telephony but will need to be extended to apply to the NII.

The proponents of Universal Service believe that not all areas in the U.S. can support the cost of telephone and that subsidy is a responsibility of modern government in an affluent society. The telephone has long ago jettisoned its luxury profile and is now an essential part of modern life, for some an unrivaled life-line--probably for the U.S. more than any other nation on earth. The opponents, while embracing the goal of telephone service for all, challenge federal or state subsidy, claiming that it is not properly targeted allowing the affluent to benefit as much as the poor (see below).

There is no Constitutional clause to give credence to either case. While the notion was contained in the Communications Act, it was far from specific in its definition. "To make available, so far as possible, to all the people of the United States, a rapid, efficient, nationwide and worldwide wire and radio communications service with adequate facilities at reasonable rates" (6).

The wording has been unsatisfactory for decades, written for a world when radio and telephone networks were in their infancy. While the telephone had been patented by Alexander Graham Bell in 1876, the social dependency on the technology had yet to be established. Nevertheless, the Federal Communications Commission (FCC), spawned from the same legislation, supported the Universal Service commitment.

But Universal Service, in an information based economy, demands more facilities in its basic service than mere telephony. "While a standard telephone line can be an individual's pathway to the riches of the Information Age, a personal computer and modem are rapidly becoming the keys to the vault. . . .This suggests a need to go beyond the traditional focus on telephone penetration as the barometer of this nation's progress toward universal service"(7).

The ethos behind such political and social commitment is under serious scrutiny. No policy would be allowed to disenfranchise the current beneficiaries and no political forum could overtly endorse such a goal as the U.S. moves towards creating its *Information Superhighway* (8).

An information-based society is precipitating serious questions. Namely, what is the minimum content of Universal Service and who is to build the infrastructure, particularly in areas currently struggling to produce basic telephone service.

> There are, however, 22 states in which telephone penetration is lower than the national average. . . . These states are New Hampshire, West Virginia, Kentucky, Missouri, Arkansas, Louisiana, Mississippi, Tennessee, North Carolina, South Carolina, Georgia, Florida, Oklahoma, Texas, New Mexico, Arizona, Nevada, Oregon, Idaho, Montana, Alabama and Alaska. (9)

More than a quarter of the U.S. population lives in what is designated a rural area. And in the Information Age, where advanced communications will be a fundamental ingredient of economic growth, will they be disenfranchised to become victims of overt economic apartheid. Will those in the urban areas who are on or below the poverty threshold, be disenfranchised? Consumer groups claim that discrimination is already in the making, termed *electronic redlining.*

> Redlining is the term used to describe how banks and insurance companies refuse to lend money or sell insurance policies to people in low-income and minority neighborhoods. . . . "Right now, the phone companies get to decide when, where and how these networks will be built and paid for without any input from the communities that will be served by them" says Bradley Stillman, the Consumer Federation's (of America) counsel. (10)

The same questions keep echoing in debate. Who will pay for the *Information Superhighway* and at what price to consumers and taxpayers? Will this new highway by-pass parts of the U.S., as the inter-state trunk routes (of the 1950s) did before them, inflicting economic hardship on those isolated?

Political Promise

"There will be many other developments that are currently invisible to us. Just as the development of the Interstate Highway System led to the creation of. . . . a thousand other new commercial developments that would have been impossible"(11).

Gore's analogy was unfortunate, given those communities by-passed by the Interstate Highway Projects. But it also open the debate about the funding of the project.

Initially, Gore's commitment appeared to be interpreted as a government financial guarantee. But it was quickly squashed by the White House, determined that the private sector would provide the funding. Construction of the superhighway would cost up to U.S.$ 1 trillion investment over the next two decades, claimed the government. Most of the funds would come from the private sector, although government would play the role of regulator and stimulate investment by deregulating certain key areas, among them telephony and cable (12). But, for many in the U.S., to enjoy such options will depend on the availability of advanced telecommunications.

But what of those commercially unattractive areas which do not interest the private sector and where the model might not apply? Would government then intervene? And how would the minimum service be defined? A society divided into 'haves' and the 'have-nots' would be politically unacceptable (see below).

The White House, through its advisor the National Telecommunications and Information Administration (NTIA) has attempted a definition, termed Advanced Universal Service but has left it to the individuals states and the FCC to provide the detail.

> The FCC and the states should use increased competition to further universal service goals through what we call Advanced Universal Service Access (Advanced USA)--so the users throughout the country have the opportunity to obtain the same types of telecommunications services that are offered through public networks. . . . Be even more important in the future in providing economic and social opportunity to all Americans. (13)

The ‘Haves’ and the ‘Have-nots’

By January 1994, the Clinton Administration had committed itself to connect every classroom, library, hospital and clinic in the United States by the year 2,000 (14). It disclosed that the U.S. was facing the risk of a ‘widening gap’ between the information ‘haves’ and ‘have-nots.’

A recent study by the NTIA describes the danger. The most disadvantaged, the report concluded, would be poor minority households in rural areas and central cities headed by high school dropouts under 25 years old. These households, were *least likely* to have telephone lines and the electronics (modem and computer), comprising the fundamental tool kit of the information age (15).

The NTIA study, Falling Through the Net: A Survey of the 'Have-Nots' in Rural and Urban America, used data from a November 1994 Census Bureau survey of telephone and computer penetration, embracing 54,000 households. Telephone and computer penetration by income levels, revealed that the lowest telephone penetration (79.8 percent) exists among poor (annual household income of less than U.S.$10,000) central city households, followed by poor rural households (81.6 percent), and poor urban households (81.7 percent). And the most disadvantaged regions were the rural South and the central cities of the Northeast and South. Here the telephone penetration is about 90 percent but the computer statistics range from 16 percent to 22 percent. Only one in three computer-owning households in these regions has a modem. "The low-income, minority, young and less educated computer households in rural and central city areas appear likely to engage actively in searching classified ads for employment, taking educational classes and accessing government reports"(16).

The NTIA report further concluded:

The lowest computer penetration, by income, is among poor rural households (4.5 percent), followed by poor central city households (7.6 percent)(17);

Only 1.2 percent of poor rural households and 3.6 percent of poor central city households have modem-computers (18);

For households, earning between U.S.$10,000 and U.S.$15,000 (defined as 'near-poor'), telephone penetration jumps to around 90 percent. But in this bracket computer penetration rates reach 7 percent in rural areas and 9.3 percent in central cities (19);

Modem penetration is 1.8 percent in all near-poor rural households and 4.6 percent of the central city equivalents (20);

Native Americans in rural areas have the lowest telephone penetration (21).

> By contrast, almost 50 percent of households earning at least $50,000 a year have a computer, with the rate rising to more than 60 percent for those households earning $75,000 or more. About one in two computer-owning households in upper-income brackets have a modem.(22)

The highest telephone penetration is rural Northeast (96.9 percent), rural Midwest (96.2 percent) and urban West (95 percent) and the highest computer penetration is the urban West, central city West and rural Northeast where about 30 percent of households own a computer (23).

However, there is an ethnic divide.

> By race, blacks have the lowest computer penetration rates in all geographic areas, with only about one in 10 black households owning a computer. Next come Hispanic households, where about one in eight own a computer. About one in five Native American households have a computer. . . one in three Asian households have a computer, against one in four white households.(24)

Another study, by EDS Management Consulting Services, based on 1,000 households echoed much of the same findings when it focused on computer penetration. It concluded that only one in six households in the U.S. had a modem-equipped computer - namely one third had a computer but only half of those had modems (25).

There is also an economic divide. Revenue from poor, rural or sparsely populated areas will never generate enough to support expensive networks. Mitchell Kapor, the founder of Lotus, now head of the Electronic Frontier Foundation, a lobby group devoted to pushing the technology towards democratic goals, says:

> An optimist's view of the next decade is that by some happy accident, the cable and telephone industries will be persuaded by a logic of self-interest to build broadband networks consistent with Jeffersonian ideals, even if they are unaware of or uninterested in the full range of democratic goals. . . a pessimist would insist that the owners and operators of broadband networks will never voluntarily give up control over the terms of access, use, and content.(26)

Financial Support Infrastructure

During the attempted passage of new telecommunications legislation (S1822) in September 1994, there seemed some consensus that Universal Service was a laudable political goal.

> The public interest requires that universal telephone service is protected and advanced, that new telecommunications technologies are deployed rapidly and equitably, and that access by schools, hospitals, public broadcasters, libraries, other public entities, community newspapers, and broadcasters in the smallest markets to advanced telecommunications services is assisted. . . access to basic telecommunications services is fundamental to safety of life and participation in a democratic society.(27)

But few of the potential operators--cable and telephony--seemed prepared to embrace the responsibility.

Long distance carriers want their contribution reduced, local carriers demand that cable contribute while the cable companies balk at the financial commitment. During 1994, more than a dozen chief executives or presidents of cable and telephone companies appeared personally before the Senate committee, examining the legislation, to lobby their conflicting views. In the end the bill died, aborted by Senator Robert Dole who remained convinced that it could not command the support it needed in a Senate vote. With it died any immediate prospect of defining universal access.

In the end those special interest groups were to kill the bill, provoking Senator Ernest Hollings (Dem-S.C.) the Senate sponsor of the legislation to accuse the Baby Bells, particularly BellSouth and Ameritech, of reneging on a commitment to support the bill without further amendment (28).

A look at the current array of funding for Universal Service in telephones gives an indication of the sources, their limitations and what is likely to change in the information age. The Universal Service Fund was created by the FCC, in the wake of the divestiture of AT&T (1982/4) and the transition which created the seven Regional Bell Operating Companies (see Chapter 4). Administered by the National Exchange Carrier Association, also created by the FCC, it has an annual budget of more than U.S.$400 millions derived from the major long distance carriers. The moneys are meant to offset the high operating cost of some telephone companies, usually in rural areas, to help keep rates low. But increased competition and FCC policy is pushing tariffs towards true cost, thus threatening such subsidies.

Another vital source of funding is under threat, that which offsets the cost of installing equipment. For decades this has been part of the connection tariff charged long distance carriers. But the FCC altered those rules in 1986 and set an 8-year program which would reduce the amount that could be offset, creating a ceiling of 25 percent. To prevent hardship, the FCC tapped the Universal Service Fund (29).

Another means of support was the budget of the Rural Electrification Administration (REA), a product of the Roosevelt White House 1935, which provided "soft" loans to companies creating telephone networks in rural areas. The REA, part of the Department of Agriculture, has been under attack since the Nixon Administration, accused of wasting funds. An Office of Management and Budget report, in 1987, inflicted mortal political wounds, claiming that a fifth of the REA budget was being channeled into five companies and that those in need were not being targeted (30).

> Set up in 1936 during the dark days of the Great Depression, the Rural Electrification Administration was charged with the mission of running power lines out into the needy countryside. By the Fifties it had pretty much succeeded in wiring rural America, but the agency lived on, making subsidized loans to increasingly less poverty-stricken and less rural customers. . . . The REA has escaped repeated assassination attempts and last year was combined with some other rural development programs into a new agency, the Rural Utilities Service (RUS). . . . This year's budget bill will likely authorize an increase of (U.S.)$165 million in rural electric lending for a total of (U.S.)$ 1.1 billion. The federal subsidy adds up to (U.S.)$ 89 million. The RUS shows every sign of surviving into the 21st century. Ever mindful of the need to remain up to date, it now promises to build an on-ramp to the information superhighway in rural America.(31)

So, what government funds will now be available for the *Information Superhighway*? Some states have acted unilaterally by passing their own communication legislation. In July 1995, Wisconsin passed an Information Superhighway Law. Among other measures, it determined that the major telephone operator invest at least U.S.$700 million in new equipment and required other companies to disclose their investment plans for advanced information services. Such investment is expected to generate new economic growth opportunities, even allowing substantial numbers to work from home (telecommuting) (32).

What is also clear from the Wisconsin initiative is that each community wants the latitude to dictate its individual needs. The proposed (and aborted) telecommunication legislation of September 1994 highlighted that demand.

> Until now, Congress and the courts have properly acknowledged that the telecommunications industry has a local responsibility to serve each community's local needs and interests . . . . But this bill (S1822) would reverse a proud tradition of local participation and cause irreparable harm to local jurisdictions. It removes local governments from participation in the deployment of the information superhighway. Until now, local governments have been able to use their authority over public rights-of-way to protect residents from unfair cable television and telephone company practices such as red-lining, insisting on universal service and public access (33).

So, the political promise of the *Information Superhighway* has yet to be realized, its funding yet to be decided and its participants yet to agree on their roles. The cable television companies, long distance carriers and the local telephone companies (Bells and independents) are preparing to embrace the new climate of Capitol Hill which will allow them to compete in each others' markets. These players and the momentum generated by the success of the Internet (see Chapter 1) has heralded a new dawn.

The Merger Phenomenon

This new political climate has embraced competition as its ethos, determining that an unbridled industry or at least one with minimum regulation will encourage innovation and be reflected in reduced prices. But that strategy has also endorsed mergers and partnerships on an unprecedented scale, the effects of which are barely understood.

John Sculley, ex-chairman of Apple Computers, fears that the biggest and most powerful companies are teaming up to create monopolies to control and shape the information industry. “People are racing to get deals in place before society wakes up and understands what's going on” (34).

Since that warning, multimedia mergers have almost become commonplace, the most spectacular involving the television industry. For example, BellSouth and Ameritech’s multimedia partnerships with Disney; MCI's much publicized U.S.$2 billions injection in News Corporation; Disney's purchase of Capital Cities/ABC for U.S.$19 billions while Westinghouse purchased CBS for a more modest U.S.$5.4 billions. (35)

These mergers are monuments to a new mood which has been prevalent on Capitol Hill since the beginning of 1995. A new Republican movement won control of Congress in the elections of November 1994, determined to implement a revolutionary plan deemed *A Contract With America.* Whatever the nuances or the motivations, the results are stark. Industries, previously considered to have been constrained by stifling regulation are to be freed. In that regard telecommunications is writ large, despite the protests from consumer groups which are not convinced by the arguments and are fearful that such freedom is a license for predatory pricing and blatant violations of antitrust.

> The Consumer Federation of America, for one, believes increased competition will lead to increased bills. In a study conducted late last year, the Washington-based organization called the telecommunications legislation a massive special interest giveaway at the expense of the American consumer. . . . If it becomes law, every consumer across the country will feel the effects directly in their pocketbooks.(36)

The mergers also reflect a pace dictated by technology. The digital collation and transmission of information has meant, given the appropriate capacity, that video and audio signals can be transmitted with no significant technical difference. Consequently, the frontiers which separated industries were dictated by the limitations or characteristics of their distinct technologies. The respective regulations reflected those differences. Now, those technical distinctions are gone, making many of the controls obsolete.

The same technology which spelt convergence, has also created an appetite for multimedia product--text, audio and video encapsulated in one medium. Telephone companies, newspaper groups, computer manufacturers and the like have been forging partnerships at an astounding rate. The Department of Justice has expressed no obvious opposition to these partnerships.

> Technological advances in the transmission of voice, video, and data are fostering fundamental changes in the telecommunications industry. For example, large local telephone companies plan to offer video services in competition with cable and broadcast television, while cable television companies plan to offer local telephone service over their wires in competition with the local telephone companies. The administration believes that these technological changes provide the opportunity to develop an *Information Superhighway* that could provide every element of society with ready access to data, voice, and video communications. (37)

Table 3-1. Sample mergers and their purpose (full list in Appendix)

Altanta Journal & Constitution with BellSouth	Audiotex service, offering Yellow Pages and newspaper classified (38)
America Online	Interactive service for articles from Omni, the General Media science fiction magazine, and Compute (39)
Apple (Applelink)	News and reference like Dow Jones, Tribune Media and Groliers' Encyclopedia (40)
Bellcore and New Jersey Bell	To develop MORENET (Morris Research and Education Network, giving access to the Internet via public libraries. (41)
Cox Newspapers and Prodigy	Nationwide interactive network. Newspapers in Atlanta and West Palm Beach, Florida.(42)
Microsoft, TCI, Time Warner	Discussing developing a system for transmitting interactive programming (43)
News Corporation, owner of Fox Television, The Times (London), Harper Collins, TV Guide and other publications.	Purchase the 12 year-old Delphi Internet Services, formerly General Videotex Corporation.(44)

Table 3-1. (contd)

Prodigy	Concludes deals with 15 cable television companies, including Atlanta-based Turner Broadcasting System (45)
TCI	Invests U.S.$100 million in Carolco Pictures (46)

Even two of the Bell companies, formed in the breakup of AT&T, are considering taking advantage of the new mood on Capitol Hill and reuniting again.

> Officials at Bell Atlantic and Nynex are exploring the possibility of merging their companies into the second largest phone company, after AT&T. The new entity would have more than U.S.$27 billion in annual revenue and U.S.$3 billion in profits, giving it a powerful head start in tackling the long distance business. Approximately one-third of all U.S. long-distance calls either originate in or connect to one of their combined regions.(47)

The partnerships themselves are unimportant. What they represent is an industrial drive, endorsed by a political commitment. Some of these mergers, principally the overtures of giants like TCI, IBM and Microsoft have been scrutinized by the Department of Justice. But the political mood is sympathetic and without waiting for new legislation to be in place, changes have been taking place as if it were. That mood reflects the intention to dramatically alter the industrial climate and its regulatory structure as prerequisite to the development of the U.S. information society.

Consensus Strategy

A report prepared for the U.S. government by the General Office of Accounting (GAO) highlighted the issues which need to be addressed to lay the foundations for the U.S. *Information Superhighway*. The study was prepared from information and views culled from the FCC, the Department of Commerce, the National Science Foundation, the Department of Education, the Office of Technology Assessment, the Department of Defense, the National Security Agency, the Rural Electrification Administration and United States Telephone Association. If the GAO findings are reflected in government strategy, commercial and industrial latitude will be exchanged for investment, particularly in upgrading the local loop.

Competition in the long distance market, the GAO maintains, precipitated substantial investment in the long distance infrastructure, and with it, benefits in pricing. Long distance prices were reduced by some 40 percent, in real terms, in the ten years after the divestiture of AT&T whose share of that market has dropped from 92 percent to below 60 percent in ten years. These investments represent the interstate portions of the *Information Superhighway* (48).

A similar infrastructure, with the appropriate capacity, needs to be constructed for the local networks. But the task at the local level is more complex, requiring substantially more investment and major changes in legislation (49).

Increased competition and advances made in technology have also spurred the major long distance carriers like AT&T, Sprint and MCI to lay high capacity fiber optic networks to carry digital transmissions. AT&T spent some U.S.$ 6 billion between 1984 and 1991. Between 1986 and 1993, nearly 100,000 miles of fiber cable were installed by the long distance companies (50).

> These improvements in the long-distance infrastructure have provided the large capacity that the *Information Superhighway* could conceivably require. However, local infrastructure will also need to have greater capacity if the *Information Superhighway* is to reach homes, schools, and businesses. Because the local infrastructure contains many times the route-miles of the long-distance infrastructure, these capacity improvements will be more costly.(51)

The GAO report is bullish, claiming that many additional services, health, government information and education will be made available through the U.S. *Information Superhighway*. The networks need to accommodate interactive video (or the capacity equivalent) if the potential of the technology is to be fully realized. The local telephone infrastructure at the moment has very limited capacity. The copper telephone wire which links 95 percent of U.S. homes could not provide two-way communications, the essence of the *Information Superhighway*. Building the new infrastructure then could cost up to U.S.$ 500 billion, the GAO suggests. High capacity fiber would carry many of the *Information Superhighway* services in the interstate and long-distance portion of the infrastructure (52).

Accompanying Problems

The U.S. Information Superhighway will be accompanied by a host of problems including security, constitutional rights, pornography and privacy - some never before addressed. Recent incidents in all of these sectors bear witness to the complexity.

Pornography

Pornography and its conveyance on networks (even those professionally monitored commercial on-line services) have shocked many sectors of U.S. society. Recent incidents well reflect that anxiety. In September 1995, the Justice Department disclosed details of the search of 125 homes and offices during an investigation into child pornography involving users of America OnLine. A day earlier the Secret Service had arrested six people suspected of "computer hacking" and the sequestration of 30 computers (53).

The new telecommunications legislation contains provisions to tackle obscenity and indecency.

> During consideration of the bill in Executive Session, an amendment was offered to address an increasing number of published reports of inappropriate uses of telecommunications technologies to transmit pornography, engage children in inappropriate adult contact, terrorize computer network users through "electronic stalking," and seize personal information. . . . The amendment, which was adopted by voice vote, modernizes the protections in the 1934 Act against obscene, lewd, indecent, and harassing use of a telephone. These protections are brought into the digital age. The provisions increase the penalties for obscene, harassing, and wrongful utilization of telecommunications facilities; protect privacy; protect

> families from uninvited cable programming which is unsuitable for children; and give cable operators authority to refuse to transmit programs or portions of programs on public or leased access channels which contain obscenity, indecency, or nudity. The measure specifically excludes from liability telecommunications and information service providers and system operators who are not themselves knowing participants in the making or otherwise responsible for the content of the prohibited communications. (54)

Security

According to the market research group ActivMedia, financial transactions on networks like the Internet were worth some U.S.$ 118 million between September 1994 and August 1995. The levels of such transactions are modest, compared with the U.S.$ 600 billion in world-wide Visa transactions made in 1994. A further study conducted by Dataquest among Internet users cites a reluctance to use the network to conduct credit card purchases. Fewer than 25 percent expressed a willingness because of poor security (55).

Privacy

“With technology, you can point a telephoto lens in my window and take pictures of me, but it's not acceptable in our society,” Professor Joel Reidenberg, Fordham University School of Law (56).

The promise of the information age is to be accompanied by potentially serious breaches of privacy. They are dangers, some blatant challenges, to freedoms once considered to be the rights of the individuals protected under amendments to The U.S. Constitution.

Legislation, like the Privacy Act of 1974, attempted to define individual rights and the responsibilities of the agencies which have access to such sensitive information and accompanying license to use it. Unlike Europe, the U.S. has demonstrated a marked reluctance to enact legislation in this area.

But the privacy issue has many dimensions. They encompass the right of individuals to know what data are being accumulated, the accuracy of that data, the primary, secondary and tertiary uses of it and the motley collection of diverse commercial interests which manipulate and exploit the same.

In the U.S., no policy is apparent to tackle these questions. Americans already freely give a host of personal information when applying for credit cards, loans, job applications and the like (57).

The Cable Act of 1984 was to give early focus to privacy. It ensured that cable operators provide subscribers with separate and conspicuous statements outlining the nature of the personal information collated, to whom such data had been disclosed and the purpose of such disclosures (58).

But more than a decade has passed since then. As the technologies converge, personal data--from eating habits to sexual preferences--are being accumulated, or able to be, by commercial bodies seeking to exploit the consumer market. "As we see a convergence between telecommunications, computers and information processing, almost any transaction you enter into is leaving some kind of trace"(59).

The National Information Infrastructure Task Force (NIITF), a think tank of the Department of Commerce, has also recognized and addressed the privacy issue. It has issued guidelines for the use of such personal computer data but stresses they are not enforceable in law. The NIITF guidelines covers much of the same ground as the 1984 Cable Act, namely why the information is being collected and what steps will be taken to protect its integrity, confidentiality and quality (60).

If the information age realizes just a fraction of its political promise the Bell companies, the cable television operators and the consumer on-line services, among others, will be capable of trespassing on privacy in an unprecedented way. Each plans to provide services to the consumer, carrying information to and from the home.

The success of consumer on-line services has raised the privacy issue once more. Every transaction leaves a "footprint" which can disclose tastes, habits, preferences and particularly, private appetites. For example, CompuServe has overtly marketed CompuTrace, a service which provides the last known address of any person in the United States. Clearly, not all of the information provided by this service is a direct result of information acquired through the CompuServe but it does illustrate the enormous power wielded by those with advanced networks and matching computational capacity. "The private sector has amassed even greater power than government, as computers have become cheaper and more decentralized, and networks have made it easy to link scores of far-flung databases"(61).

Some aspects of the current debate echo fears of more than a decade ago. The increasing use of computers by government, some twenty years ago led to the 1974 legislation, which was meant to allay the fears of those convinced that the U.S. was making substantial strides down the road to "Big Brother"(62).

A recent report by the General Accounting Office highlighted that sensitivity. It disclosed that more than 1,300 IRS employees have been investigated in the past five years on suspicion of snooping through private taxpayers files. These investigations resulted in disciplinary action against 420 (63).

Whether the 1974 legislation paid only lip service to the fears is debatable. What is true is that computers and processing power is no longer solely in the hands of central government, no longer in the hands of a civil service elite. And while such an elite has inspired fierce criticism, now ease of access is equally disturbing. The technology and its power has been dispersed. And ironically, that dispersion has not diluted the danger but amplified it.

The infrastructure of the Information Superhighway or the National Information Infrastructure (NII) is also likely to magnify the potential problems. The major industrial players are each making plans to evolve high capacity networks, most with switching (computational) capabilities and all of them entering the home. While the business sector will be seriously courted, the ordinary consumer is a critical element in the U.S. Information Society.

The practices of such agencies (FBI, CIA, IRS) increasingly, have depended on surveillance. Here the privacy debate becomes impassioned.

The FBI has successfully pleaded the case that its surveillance needs will still be real in the digital networked world of tomorrow. Special equipment is to be inserted into the network at strategic points, to allow surveillance, in the name of national security. Legislation requiring telephone companies to give access to law enforcement agencies for wiretapping was approved by Congress (64).

The White House, clearly convinced of the danger of a subversive element misusing the *Information Superhighway*, supported the legislation. The technical standards for coding and transmission are the brainchilds of the National Institute of Standards and Technology (NIST), while the National Security Agency, which continuously supervises surveillance on telecommunications traffic, has designed and will administer, the standard (65).

The FBI, has established a National Computer Crime Squad of 12, based in San Francisco. Both the Bureau and the Justice Department succeeded in getting legislation giving them access to telecommunications traffic and have sought to limit the private use of computer software which scrambles data and restricts access (66).

Predictably, these measures have been vehemently opposed by groups concerned about such government control (67). Typical is the Electronic Privacy Information Center, a project of Computer Professionals for Social Responsibility and the Fund for Constitutional Government. "In the first wiretap case to go before the U.S. Supreme Court (Olmstead v United States, 1928), Justice Brandeis wrote, 'writs of assistance and general warrants are but puny instruments of tyranny and oppression when compared with wire-tapping'" (68).

These writs and general warrants gave British troops virtually unlimited authority to search homes and seize personal property. The Fourth Amendment sought to limit such powers. "But Brandeis believed that wire-tapping would expand the ability of government to search and seize, even exceeding the powers of the original general warrants and writs of assistance used by British troops"(69).

So, there is a disturbing backdrop to the information age. Databases, containing banks of categorized information, have already molded themselves into an industry. There were about 300 commercial databases about 15 years ago. In 1993, the Gale Directory of Databases illustrated more than 5,200 (70).

The debate about all of these issues is now public and pressure is likely to be imposed on the U.S. government, from individuals and lobbyists alike, who seek a demonstrable change in political attitude and in legislation. These lobbyists appear to have an unforeseen ally in Europe.

> The Europeans are proposing strict conditions under which firms and governments can collect names, addresses, purchasing histories and other personal information. The individual involved must consent. Data can't be gathered on race, ethnic origin, political or religious beliefs, union status, health or sexual orientation. And the subject has to be told, and given the chance to refuse, when information gathered for one purpose is shared with anyone else.(71)

The information-based society has yet to address this fundamental issue. The private sector has already been accumulating this data unchecked. The unexpected and sympathetic pressure exerted from Europe may be critical in achieving that reversal. Some would consider it ironic, that Europe (from whose oppressive governments the original U.S. settlers had fled) should be the champion of U.S. privacy.

However, the U.S. has committed itself to a substantive change in its telecommunications environment confident that it will generate economic growth in an age increasingly dependent on information, its collation, its storage, its transmission and immediate retrieval.

Despite earlier disputes the White House and the Congress reached a compromise over their differences on the telecommunications legislation which largely concerned the role of the Department of Justice. Congress has now passed the new legislation.

> With the White House giving enthusiastic support to the final version of major telecommunications legislation worked out by a House-Senate negotiation committee, the bill is certain to become law. The legislation will remove regulatory barriers that now separate the information industry into protected components (i.e., local phone, long-distance phone, and cable TV segments); the result will be vastly increased competition across current boundaries, along with new mergers and strategic partnerships. In the final bill, the Justice Department has been given a partial role in deciding when a Bell operating company faces enough local competition to justify allowing it to compete in the long-distance market. The bill contains provisions for fines and imprisonment of persons who make "indecent" material available to minors over computer networks--provisions distressing to civil liberties groups, which say that "indecent" is too vague a concept and that the legislation will violate the First Amendment right to free speech.(72)

The Definitive Step

The political commitment of the United States to a liberalized telecommunications market was endorsed on 1 February, 1996. The Communications Act of 1934 was rewritten to allow competition between the cable television, local and long distance companies, to deregulate cable rates and to allow the media groups to expand and merge.

Cable

Cable companies will be able to offer local telephony. Also, the legislation deregulates customers of small cable TV systems--about 20 percent of the nation's 61 million cable subscribers, then deregulates rates for all other customers by March 31, 1999, or sooner if a cable company competes against a telephone company for customers.

Telephony

The legislation rescinds the restrictions imposed on the Bell companies at the divestiture of AT&T in 1982 (see chapter 4), allowing them into long distance, and returns power to the Federal Communications Commission to implement telecommunications policy, some of which had been eroded and exercised by the courts. Deregulates customers of small cable TV systems--about 20 percent of the nation's 61 million cable subscribers.

For nearly four years Congress and the White House had argued over the content of the legislation. An earlier attempt had been killed before a final vote in the Senate in September 1994, to be introduced in another form the following year. Voting within two hours of each other, both the House and Senate approved a final version of a bill. The House approved the bill first, by a vote of 414-16; the Senate's vote was 91-5.

Indecency was a particular issue which attracted new measures. The new legislation makes it a crime to transmit indecent material over computer networks (up to two years in prison and a U.S.$100,000 fine) and requires television manufacturers to include electronics, termed the V-chip, to allow parents to block undesirable programming (73).

This chapter examined the political commitment of the United States to its *Information Superhighway*. It looked at Universal Service, the support mechanism which makes that happen and the new problems which will accompany information networks - security, privacy and decency. I t also briefy looked at the legislative measures which are about to come into effect to build that U.S. information infrastructure.

The next chapter will look at the measures taken by Europe and the United States, in the last decade, which have brought the continents to their current state.

Notes

1. National Telecommunications and Information Administration. Telecom 2000. Washington: Department of Commerce, Oct. 1988.

2. U.S. Government. U.S. Goals and Objectives for the G7 GII Conference. Washington/ Brussels: U.S. Government, 1 Sep. 1994. n. pag. Online. Internet. 20 Mar. 1995.

3. U.S. Government, G7 Goals n. pag.

4. Gore, Al. International Telecommunication Union, World Telecommunication Development Conference. Buenos Aires/Washington: White House, 21 Mar. 1994. n. pag. Online. Internet. 10 Sep. 1995.

5. NTIA, Telecom 2000 79.

6.Communications Act, Section 1, 1934.

7. National Telecommunications and Information. Falling Through the Net: A Survey of the 'Have-Nots' in Rural and Urban America. Washington: NTIA, Aug. 1995. n. pag. Online. WWW. http://www.ntia.doc.gov/ntiahome/fallingthru.html: Background. 10 Sep. 1995.

8. General Accounting Office. Information Superhighway - Issues Affecting Development. Washington: GAO, 30 Sep. 1994. n. pag. Online. Nexis. 10 Feb.1996.

9. Dordick, Herbert S., and Fife, Marlyn Diane. Universal Service in Post-Divestiture USA. London: Butterworth-Heinemann, 1991: 120.

10. Mendoza, Manuel. "Information superhighway bypasses poor neighborhoods." Dallas Morning News/ Times Union. 24 July 1994: H2. Online. Nexis. 10 Feb.1996.

11. Gore n. pag.

12. Corbin, Lisa. "Information Technology, speeding up the data superhighway,government paves the way for the private sector." Government Executive Feb. 1995. n. pag. Online. Nexis. 10 Feb.1996.

13.National Telecommunications and Information Administration. Telecommunications in the Age of Information. Washington: Department of Commerce, Oct. 1991: 286-7.

14. "Study finds broad student use of cable in the classroom." Educational Marketer 11 Sept. 1995. n. pag. Online. Nexis. 10 Feb.1996. Applebone, Peter. "Computer idea gets mixed response." New York Times 25 Jan. 1996: A17. Online. Nexis. 10 Feb.1996.

15. "NTIA study sees info age 'have-nots' as poor, young, uneducated." Telco Business Report 14 Aug. 1995. n. pag. Online. Nexis. 10 Feb.1996.

16. NTIA, Falling Through The Net. Information, Disadvantaged n. pag.

17. NTIA, Falling Through The Net. Information, The Facts n. pag.

18. NTIA, Falling Through The Net. Information, The Facts n. pag.

19. NTIA, Falling Through The Net. Information, The Facts n. pag.

20. NTIA, Falling Through The Net. Information, The Facts n. pag.

21. NTIA, Falling Through The Net. Information, The Facts n. pag.

22. "NTIA study sees info age 'have-nots' as poor, young, uneducated." n. pag.

23. NTIA, Falling Through The Net. Information, The Facts n. pag.

24. "NTIA study sees info age 'have-nots' as poor, young, uneducated." n. pag.

25. EDS Management Consulting Services. PCs: Becoming Everyday Appliances. Washington: EDS, Aug. 1995. n pag.

26. "The Case for Jeffersonian Information Policy." Wired . n. pag. Online. America Online. 27 Sep.1994.

27. U.S. Congress. S.1822, Communications Act of 1994. Washington: U.S. Congress, 3 Feb. 1994. n. pag. Online. WWW. http://www.bell.com. 10 Jan. 1995.

28. Ubois, Jeff. "The great communication shake-up; legislation to allow telephone and cable companies to compete." Midrange Systems 30 Sep. 1994: 39. Online. Nexis. 10 Feb.1996.

29. General Accounting Office. Telephone Communications, Issues Affecting Rural Telephone Service. Washington: GAO, Mar. 1987. Online. Nexis. 10 Feb.1996: 18.

30. Daley, Steve. "Plan that wired rural U.S. facing budget ax." Chicago Tribune 11 Apr. 1993: 1. Online. Nexis. 10 Feb.1996.

31. Norton, Rob. "Why federal programs won't die." Fortune 21 Aug. 1995: 35. Online. Nexis. 10 Feb.1996.

32. "Telecommunications future: Arizona in the dust." Phoenix Gazette 11 July 1994: B4. Online. Nexis. 10 Feb.1996.

33. "Localize the superhighway." Washington Post 18 Sept. 1994: C8. Online. Nexis. 10 Feb.1996.

34. Sanger, Elizabeth, and Quittner, Joshua. "Digital dealing; companies seeking fortunes in tomorrow's technology race to join forces." Newsday 19 July 1993 : 19. Online. Nexis. 10 Feb.1996.

35. Maney, Kevin. "Merger mania spreads to Disney World." USA Today 1 Aug. 1995: MONEY1B. Online. Nexis.10 Feb.1996.

36. Auerbach, Jon. "AT&T cuts latest move in deregulation drive; companies gearing up for heightened competition." Boston Globe 5 Jan. 1996: E29. Online. Nexis. 10 Feb.1996.

37. General Accounting Office, Information Superhighway n. pag.

38. Bennett, Randy. Paper, Newspaper Association of America 21 Oct. 1993: 4.

39. Interactive Services Association (ISA). Update. Washington: ISA, Sep. 1993: Vol.12 /10: 2.

40. Interactive Services Association (ISA). Update. Washington: ISA, Aug. 1993: Vol. 12/8: 24.

41. ISA, Update, Vol.12 /10 4.

42. ISA, Update, Vol.12/8 16.

43. Sanger and Quittner 19.

44. ISA, Update, Vol.12 /10 5.

45. "Turner, BellSouth using Prodigy for marketing." Atlanta Journal and Constitution. 4 Nov. 1993: 2C. Online. Nexis. 10 Feb.1996.

46. Sanger and Quittner 19.

47. Edupage. n. pag. Online. Internet. 22 Dec.1995.

48. General Accounting Office, Superhighway, Principal Findings n. pag.

49. General Accounting Office, Superhighway, Principal Findings n. pag.

50. General Accounting Office, Superhighway, Technological Advances n. pag.

51. General Accounting Office, Superhighway, Technological Advances n. pag.

52. General Accounting Office, Superhighway, Chapter 2 n. pag.

53. Moran, John M. "On-line crime battle boots up officials target scams and porn." Hartford Courant 18 Sep. 1995: A1. Online. Nexis. 10 Feb.1996.

54. U.S. Congress. Committee on Commerce, Science and Transportation Committee, Report on Telecommunications and Competition and Deregulation Act of 1995, Section 8, Obscenity and other wrongful uses of telecommunications. Washington: U.S. Congress, 23 Mar. 1995.

55. Santalesa, Rich. "Feeling safe and sound online; Internet security". Computer Shopper Oct. 1995: 620. Online. Nexis. 10 Jan.1996.

56. "Riding the information highway." Newsday Special Reprint. Jul. 1993: 24-5.

57. "Keeping your private life private: information technology threatens privacy." USA Today 27 Oct. 1992: 5B. Online. Nexis. 10 Sep. 1995.

58. Cable Communications Policy Act, Section 631. 30 Oct. 1984: S66.

59. "Riding the information highway." 24-5.

60. National Information Infrastructure Task Force, Privacy Working Group, Information Policy Committee. Privacy and the National Information Infrastructure, Principles for providing and using personal information. Washington: NIITF. n. pag. Online. WWW. http://www.eff.org/pub/GII_NII/Govt_docs/. 6 June 1995.

61. Wilson, Kinsey. "Your life as an open book: digital wizardry that promises to make life more convenient could threaten your privacy." Newsday 21 Jul. 1993: 46. Online. Nexis. 20 Sep. 1995.

62. Emling, Shelley. "How much do providers know about you? Computer services have compiled an enormous amount of information on subscribers." San Diego Union -Tribune 30 Aug. 1994:16. Online. Nexis. 10 Sep. 1995.

63. Montague, Bill, and Fiorini, Phillip. "IRS sneaks a peek/ privacy abuse 'confirms the worst fear'." USA Today 20 Jul. 1994: 1A. Online. Nexis. 20 Sep. 1995.

64. "Bill would ensure law enforcement is able to tap wires." Wall Street Journal. 30 Sep. 1994: B5. Online. Nexis. 4 Oct. 1995.

65. Rotenberg, Marc. "Wiretapping bill: costly and intrusive." Washington Times 24 Oct. 1994: 20. Online. Nexis. 3 Oct. 1995.

66. Moran, John M. A1.

67. Among these the Electronic Privacy Information Center and Computer Professionals for Social Responsibility.

68. Electronic Privacy Information Center, comp.society.privacy, 2 Oct. 1994. n. pag. Online. Internet. 10 Nov. 1995.

69. Electronic Privacy Information Center n. pag.

70. Paul, Nora. "Database and bulletin board services: a guide to on-line resources." Quill. Sep. 1993: 18-19.

71. Tye, Larry. "EC may force new look at privacy; no private lives." Boston Globe 7 Sep. 1993: 10. Online. Nexis. 6 Oct. 1995.

72. Edupage. n. pag. Online. Internet. 22 Dec.1995.

73. Carter, Bill. "Telecommunications bill at a glance." New York Times News Service 2 Feb.1996. n. pag. Online. Nexis. 3 Feb. 1996.

CHAPTER 4

THE U.S. AND EUROPEAN DEVELOPMENT OF THEIR INFORMATION ECONOMIES

The purpose of the chapter is to examine the background to telecommunications policy development in Europe and the United States and to describe the steps, taken by each, as they moved towards their current position.

The experience of the U.K. is discussed in some depth since culturally and politically it has been akin to the United States but also because its telecommunications program of liberalization has been ahead of any country in Europe. The British model is also that adopted by the European Commission in its drive to introduce similar measures in the other member states. The political commitments and the motives behind the European and the American measures will also be examined and discussed to give some comprehension of the perspectives and priorities. This adds a further dimension to those discussed in Chapter 2 (Europe's commitment to its Information Society) and Chapter 3 (United States commitment to its Information Superhighway).

Europe

"We cannot yet predict exactly what will happen with multimedia and convergence. All we know is that networks must be developed and competition must be introduced and protected" Karel Van Miert, the European Union competition commissioner (1).

The U.K. and the United States developed their information technology sectors almost in parallel. Both countries were to encourage a Europe, still struggling for an identity, to do the same. (see Chapter 2) And while the Internet played a significant part for both there were other critical elements in the telecommunications equation--cable and telephony.

The British had been inspired by the determination of Premier Margaret Thatcher to drastically cut the public sector and that of the European Commission to transform government owned telecommunications authorities into privately financed commercial companies (see Chapter 2). The USA had pursued a different route. There, the monopoly power of the telecommunications giant AT&T was challenged by the regulatory Federal Communication Commission and by the Department of Justice, and dismantled to be replaced, at least in the long distance market, by competition.

In the U.K. at the fore of what could be described as early information technology, was the British Broadcasting Corporation (BBC). It and other public funded broadcasters which spanned Europe--members of the European Broadcasting Union--by their very existence, influenced the direction of particular IT sectors, principally cable television. The British case, in particular, illustrates the European perspective where the public sphere is contracting in favor of the commercial sector--a move much favored by the United States.

But the Europeans have long been proud of their public service commitment to broadcasting, defining it in educational terms rather than entertainment, their first incursion into information. "The purpose is to preserve the social order from disruption, and to ensure that certain standards of thought, feeling and behavior are upheld. Good taste is held to derive from established practices, not from the way people currently behave or from what they want"(2).

So, with such laudable aspirations, the BBC was to be the pace-setter for modern media in the U.K., setting goals which were ambitious and were as much related to a "social information policy" as to broadcasting. Other countries in Europe pursued similar goals.

At its helm in those early years was its first Director General, John Reith, a conservative Scotsman, whose attitudes shaped the austere output of the corporation for years. Even though a Scot, English accents were to dominate the national airwaves under his direction, making the BBC an organ of the Establishment.

The ground rules for the corporation were set out in a paper "Broadcasting over Britain" published by Reith in 1924. Its pretentiousness is difficult to ignore. It was to shackle the BBC with a host of commitments and ambitions which have proved a burden as it has fought to retain audiences in the face of a burgeoning commercial sector and cable. But it defined social goals much more than entertainment ones (3).

Since then, broadcasting in Britain has been cautiously studied and re-studied with public service broadcasting epitomized by the BBC.Commercial television; Independent Television--ITV--was introduced in 1954 but with tight regulation, consistent with the public service model. Two more channels--one to each of the sectors (BBC 2--1965 and Channel 4--1981)--were added to the network but still carefully preserving the original ideals. The British model gave the commercial sector monopoly in advertising and the BBC the same in the public sector, where money was raised through a levy imposed on all owners of television sets. On continental Europe, government “control” of broadcasting was important, too, and that was easily managed through the mechanics of allocating frequencies and devising charters to outline the broadcasters’ function.

But in Britain, in the 1980s, a political mood prevailed unsympathetic to the public sphere. The Conservative Thatcher government was determined to minimize the public purse and to ensure that those that remained would be subject to the same pressures and targets of the commercial sector.

Encouraged by that political climate the British Treasury added another dimension. It had long been dissatisfied with the rewards it received from the commercial broadcasting sector and was determined to change the pattern. Each commercial broadcaster paid revenues to the Treasury based on a complex formula of profit.

Advertisers were equally dissatisfied with a system that placed such power in the hands of the television companies. This curious alliance demanded change and exerted substantial influence in reshaping the finances of the BBC and the commercial sector. More importantly, they gave support to the introduction of cable television.

The technology had the capability of “pumping” hundreds of television, radio and information signals into any home. Its very nature would rip apart the previous structure. Not surprisingly, the political momentum generated by the promise of the technology, exerted enormous pressure on the broadcasting establishment. More importantly, it challenged the traditional public service model (4).

Also, Monopoly was under siege. Competition and consumer choice were now part of the new political pattern. The consumer was all important and those appetites paramount; consumer choice brought to the home by broadcasts, cable and telephone. These were the forces confronting economist Professor Alan Peacock, during a 1986 inquiry into British television (5). Peacock responded to these exertions. He satisfied the Treasury by recommending that commercial franchises be sold to the highest bidder. But his main thrust was to create an infrastructure which would take the BBC out of the political arena by guaranteeing its income through an agreed formula for a license fee. It also set the agenda for a major change in what was to become Britain’s consumer and entertainment driven information policy. It was a change of some substance contrasted with the BBC ethos which had considered entertainment secondary.

> Our conclusion is that British broadcasting should move towards a sophisticated market system, based on consumer sovereignty. That is a system which recognizes that viewers and listeners are the best ultimate judges of their own interests, which they can best satisfy if they have the option of purchasing the broadcasting services they require from as many alternative sources of supply as possible.(6)

Peacock argued that the consumer market would drive cable expansion. He contented that entertainment would generate the funds for other information services. Cable would connect every home to a whole new world of information including medicine, education, television, banking, shopping and voting. But the technology had a disappointing start, despite the political hype which accompanied its arrival in the early 1980s.

The Information Technology Advisory Panel (ITAP), created by the Office of the British Prime Minister in 1981, had made predictions about the technology in a report published the following year (7). But the confidence had little foundation. The same bullish predictions had been made in France but the results were equally disappointing. That year (1982) had been designated Information Technology Year by the British government.

The view exemplified in the U.K. ITAP report, reflected that which had been aired before, that entertainment would drive broadband cable TV with all the benefits of the information society to follow.

British cable was the subject of another inquiry, this time under Lord Hunt of Tanworth completed by September 1983 (8). By the following spring the government had responded. Consistent with government policy, the market was to dictate the speed of the technology's development. Again, the government endorsed the consumer-driven entertainment approach but denied it would directly intervene.

> It is not for the Government to guarantee that cable will expand at any particular rate or in any particular manner. . . . The Government's function is to create the opportunities which will enable cable development to happen provided that a market exists for it. The Government believes that a market does exist and that the economic opportunities could be significant. (9)

Despite the denial of government involvement, contained in the Hunt report the British government played an increasing role in the pace of the development of the technology. The withdrawal of capital allowances, on the cost of equipment and the installation of cable, brought the industry to a dramatic halt in 1985. But there was another more serious question which would haunt the government, principally the relationship between the newly liberalized telecommunications sector and the embryonic cable industry. That was to baffle the British Department of Trade and Industry, responsible for generating the strategy which would take the U.K. towards its information based economy.

Telecommunications, in the form of British Telecom, had undergone a dramatic change as the Thatcher government sought to inject private capital into the business and free the government from funding its expansion. "The privatization of British Telecommunications was an historic landmark. It was the first utility and largest trading enterprise to be privatized and propelled the phenomenon of regulation into prominence. BT is now the longest-serving example of a private but regulated industry"(10).

A private corporation, with the freedom to raise its own investment capital and allocate its own resources, operating in a controlled competitive environment was the model adopted by the U.K. to propel its telecommunications sector toward a new era. British Telecom was to shed its restrictive profile as a guardian of a public utility and drive the telecommunications industry in the U.K. to more efficient horizons while transforming the company into an international conglomerate capable of competing with the Japanese and the Americans. Giving the corporation a significant international profile, much needed capital would result from a share flotation and injected into network improvement. An Office of Telecommunications (OFTEL) was created by the same 1984 Telecommunications Act to act as watchdog and consumer champion. New services and price increases would all require Oftel's approval. But, the Conservative government maintained, the market would be the ultimate arbitrator (11).

The strategy, a political compromise, was almost contradictory. It would take British Telecom out of the public sector, face it with limited and regulated competition, but allow it to compete in every area of telecommunications except cable television. But this characteristically British (and European) mixture of latitude and regulation changed the nature of the industry. Previously, British Telecom had been a modest arm of the postal service addressing itself to providing and operating a telephone network and precious little else. For about 80 years nothing more was demanded. But then that appetite changed. Multinational corporations demanding quick, cheap and efficient telecommunications were becoming commonplace. The proliferation of personal computers in the 1980s added another dimension. Such were the pressures being exerted on European economies.

The other EEC countries were, somewhat reluctantly, lurching towards some form of liberalization where the monopoly of the state-owned telecommunication companies could be challenged and competition introduced. Competition would dictate efficiency which would, in theory, drive down prices. But the picture was to prove considerably more complex.

While the overt political dogma of the Thatcher government hailed the market as the driving force behind a virulent economy, it was nevertheless British and caution would prevail.

The British manufacturers of telecommunication equipment, considered by non-indigenous competitors to have enjoyed rich rewards for their products in a secure market, were still sources of much needed employment. They enjoyed lucrative equipment contracts. Full liberalization on equipment supply might cause serious problems for these companies. Such British manufacturers--Plessey, GEC and STC--were far from unique. Their equivalents straddled the telecommunications markets across Europe; the German's relationship with Siemens and the French's with Thomson were similar. This element would need to be incorporated into the European plan on telecommunications (12).

Despite the political commitment to privatize, there was substantial confusion over what strategy would best serve the new information industry. How would competitors of British Telecom relate to the corporation? And how would the new industry of cable television fuse with telecommunications? Above all, since the nature of telephone and cable network dictated vast investment in wiring and ducts what level of competition should be allowed that would encourage new operators without destroying the fabric of the existing network? (13).

While more innovative than other European member states, Britain was cautious about exposing the telecommunications market to full competition. In the end, the government opted to license just one competitive carrier which, from the outset, was to build its own network using digital transmission technology (although interconnecting with the existing network) and, in the process, act as a spur to British Telecom to do the same. Other competition offering Value Added Services, where the telephone signal was manipulated in some capacity or other was to be allowed. Later, when the frequencies became available, mobile telephony opened up another sector. But all of it would be strictly controlled by license conditions and monitored by Oftel (14).

In 1981, the British government unveiled its policy, to be encapsulated in the Telecommunications Act of 1984. The legislation abolished British Telecommunication's monopoly and paved the way for the licensing of the alternative operator, Mercury. By the summer of 1984, BT was reorganized into a private limited company (plc) and an initial 50.2 percent was offered to the public. “Although BT has been privatized, it still shoulders many of the responsibilities of a public trust. BT's license, for example, obligated the company to provide universal service, even in unprofitable rural areas. Mercury's license, on the other hand, required only that Mercury install its network in a minimum number of cities in England, Scotland and Wales by specified dates” (15).

Mercury was to be the sole competitor. No other competition would be allowed for seven years--until 1991. This commitment was to ensure that the next step--the selling of the government shares--would not founder because of substantial competition to British Telecom. To ensure success, telephone subscribers and employees could purchase shares in the company at discount rates. Trade Unions, opposed to the privatization of British Telecom due to the threat of job losses, were soon silenced when their members purchased the shares in abundance (16).

But Mercury did not have it all its way. Its original “figure of 8” network which would service the major business centers, Leeds at the tip of England and London at the base, had to be altered to include Scotland and Wales. The revised plan not only provided the blue-print for a competitive national network but allayed, at least in part, the fears of those who accused the group of “cream-skimming” and avoiding the commitment of

Universal Service. Mercury, like British Telecom, would be allowed to compete in every sector except cable television.

But cable was meant initially to be the second tier of competition in telephony. While it would be entertainment driven and funded by consumers demanding more television, it would also be the vehicle to provide competition in local telephony. But it did not expand, as envisaged, due to the difficulties in investment while the government prevented the companies offering telephone services unless in partnership with BT or Mercury (17).

How Mercury was to interconnect with British Telecom was still unclear, as were the constraints which would be imposed on their relationship. The interconnection agreements were vague and a major source of an industrial dispute between the two companies with British Telecom employees refusing to make the connection to Mercury. At the management level the companies were also in dispute, principally over inter-connection fees. While the conditions of their license dictated inter-connection, how it should be done and at what cost was left as a matter to be agreed between the two operators. It remains a contentious issue.

> Britain's House of Lords ruled. . . that Mercury Communications Ltd has the right to ask a court to interpret phrases in its interconnection agreement with British Telecommunications Plc in the area costs and overheads. The ruling allows Mercury to challenge the view of the Director General of Telecommunications that Mercury should pay a due proportion of British Telecom's total costs and overheads--Mercury claims that the Director General (head of Oftel) should look only at the marginal and additional costs incurred by British Telecom in providing services to Mercury. (18)

At the end of the seven year period in 1991, the competition provided by Mercury was still modest. Then, both the British Administration and Oftel addressed the same issue (19).

The thoughts of a government agency, the Department of Trade and Industry, were contained in a consultative paper. Its proposals indicate how restrictive the previous policies were considered to have been. It reasoned that the duopoly policy should be ended and that the government should consider applications for licenses to run competitive telecommunication systems (20).

The British government endorsed these recommendations in principal and agreed to end the duopoly by introducing a new level of competition on long distance telecommunications. It allowed industrial groups and utilities--British Gas, Water Boards, British Rail and electric utilities--to offer services.

Also, Europe has endorsed this stage of liberalization where utilities will be able to offer services on their networks, albeit initially to corporate clients (see Chapter 2). It is another example of the European Commission's determination to insist that all member states follow the pattern set by the U.K.

> Telecommunications represents the most significant civil investment in new technologies and services in the Community in the foreseeable future. . . In the Community, by the year 2000 more than 60 per cent of Community employment will be strongly information--related--and will therefore depend on telecommunications. The rise of services in the economy should not be seen as a deindustrialization process. On the contrary, services and industrial activities penetrate each other to form a new conglomerate. (21)

The remaining half of British Telecom, still owned by the government, was sold in 1991/3. The first tranche, in 1984, had attracted some 2 million shareholders, supposedly part of the 'share-ownership' policy of Premier Thatcher. Any incoming government would have difficulty returning the corporation to state ownership, given the popularity of the share issue (22).

This new policy reflected the views of a more confident Europe, determined to dismantle the government agencies which controlled telecommunications and to cite the U.K. as an example of a successful liberal market (see chapter 2). For its part, the U.K., with a liberal Europe in view, was determined to encourage more competition and attempt to make Britain the telecommunications gateway into Europe.

The relationship between cable and telecommunications was not easy to define, as Britain and the rest of Europe sought to determine an information policy. Both the licenses of British Telecom and Mercury forbade offering cable television. ITAP presented yet another report in 1985 to give some guidance on the relationships between the cable and telephone industries.

> ITAP's first report, in March 1982, sparked off a heady euphoria about the jobs and turnover which would be generated by the cabling of Britain. The Government became convinced that consumer interest in more TV channels could be used to finance an expensive new electronic infrastructure. Two-way cable links, it was hoped, would soon usher in a science fiction world of home banking and shopping. A third and more complex issue concerns the relationship between cable companies and British Telecom. When the debate about cable erupted in 1982, it was pointed out that BT (then state-owned) would be the logical supplier of interactive services through its existing national network of underground ducts.(23)

In Britain the transformation to competitive telecommunications represented a dramatic change to an industry. Once owned by government and, effectively, run as part of the Civil Service, it was now in a commercial arena for the first time. In some respects cable was in even more difficulty. Cable systems , similar to the United States, had developed to carry broadcast signals in areas with poor reception quality. But because of the British commitment to public service broadcasting--quality signals provided anywhere in the U.K. where technically possible--these systems were rare, carrying only the four broadcast channels. They had not expanded (nor had the potential to do so) as they had done in the United States. This was similar in most of Europe with the exception of the Benelux countries (see Chapter 2).

So, the cable and telephone industries were as novel as was the relationship between them. But the new cable industry was determined to become a major competitor in local telephony and sought to recoup much of its investment from offering such services.

> There's no experience to back it up. They are two completely different businesses. The presumed relationship between entertainment and telecoms is ill defined. BT is barred from offering TV for ten years, but this is of little consequence. There is a 15 billion pounds a year telecommunications market in the U.K. against a TV market of 2.5 billion pounds . In the whole of Western Europe, the ratio is similar-ECU130 billion (U.S.$ 220 billion) v ECU20 billion. . . . Capacity is not the key to success service operation is. Telecoms is an expensive, complex and long term activity. It needs hundreds of millions, even billions, in investment. It is not like media, that you can dip into, take a 50 million pounds or 100 million pounds risk, then back out when it's clear the venture is going to fail (or involves such a long payoff time that it's not worth the wait). U.K. cable investors look to telecoms to justify their huge financial commitment rather than TV driving broadband they see

> telecoms driving TV. There are major incremental costs in providing a telecoms service (24).

By the late 1980s cable television was developing a new profile but one which presented even more problems with the existing telecommunications operators. A massive influx of investment had been attracted from North America, principally from the regional telephone companies (RBOCs) (see table 4-1). These companies which operated local telephony across the United States had been prevented from offering video services. But they sought the experience of video cable and poured money into operations all over Europe. With their expertise in local telephony, their ambitions to acquire the same in video and their mammoth cash resources they were to transform cable in Britain and prepare themselves to do the same in the rest of Europe.

Whatever the political arguments surrounding the policies, dramatic changes have taken place in cable. In Britain there are now 82 cable franchises where a million local telephone lines have also been installed. According to the British Cable Communications Association, from 1996 until 2005 European-wide cable telecommunication services could result in 25 million new lines, profits of U.S.$ 9.7 billion while creating 200,000 jobs. Profits from video cable alone will double in the next ten years to U.S.$ 26.2 billion with the number of subscribers rising by 40 percent to 56 million.

Table 4-1. Sample of RBOC Overseas Investments

Company (ies)	Country	Venture
Comcast Nynex, TCI and U.S. West	U.K.	cable tv/ local telephony (25)
U.S. West and Olivetti (Videostrada)	Italy	cable tv (26)
U.S. West and Philips Electronics NV	Netherlands	cable tv (27)
TCI (subsidiary Flextech)	U.K.	20 percent of Scottish TV (28)
Microsoft., Nynex, IBM, United Artists (70 partners in total)	U.K.	university/schools network (29)
Bell Cablemedia, TeleWest and Nynex	U.K.	cable tv (30)
U.S. West and Tele-Communications Inc. (TCI)	U.K.	cable tv (31)

At the end of 1994, western and central European cable systems had passed a total of about 60 million homes. That is expected to increase to at least 63 million at the end of 1996 (32).

Unintentionally, the British policy in telecommunications became the stalking horse for Europe. The strategy is considerably more progressive than many other parts of Europe where the control of telecommunications is still being wrested by the European Commission, from the stranglehold of government owned utilities (see Chapter 2).

But in many other respects the policy has been conservative. Very little real competition has resulted--Mercury has barely touched the vast profits of British Telecom by 1995. Then BT's profits were U.S.$21.3 billion compared with C&W's (owner of Mercury) U.S.$ 963million (33) and BT had become a multinational company with many overseas investments.

Opponents of the British government policy claim that the entire strategy is wrong. They support their case by pointing to the still dominant role of British Telecom and its substantial profits. And while the group has lost some share to cable television and Mercury, the impact is modest. More than 11 years after losing its monopoly, British Telecom still has between 80 and 95 percent share of most telecommunications markets (34). "For the first time, BT is losing domestic customers--around 50,000 a month--to the cable companies. The scale of the loss, however, is hardly significant when measured against the group's 21m customer base. At this rate it would take the cable companies nearly two decades to capture even half of BT's subscribers"(35).

The critics of the British policy also point to the American groups which have invested in cable television and now are being allowed to enter mainstream telecommunications across Europe.

> State-owned Belgacom of Belgium and Ireland's Telecom Eireann, for example, are both looking for strategic partners to buy minority stakes and help them improve their competitiveness. Other state-owned European carriers are likely to follow suit before long. . . . In Belgium, bidders include Ameritech, SBC (formerly Southwestern Bell) and Bell Atlantic, while in Ireland two of the Bells are in the running--Bell Atlantic once again, and U.S. West. . . . The Bells are also strongly represented among the new consortia of banks, utilities and manufacturing companies which want to diversify into telecoms. In Italy Bell Atlantic has a 33 per cent share in the Infostrada joint venture set up with Olivetti. Initially, the venture will offer specialist services to Italian corporations but it also wants to branch out

> after 1998 (EEC target for full liberalization) to become the main rival in basic services to Telecom Italia. . . . BellSouth is negotiating to take a 40 per cent stake in a joint venture with Thyssen, the steel manufacturer which is planning to invest DM4 billion (U.S.$2.4 billion) in German telecoms by the end of the century. (36)

The experience of Europe again reflects that of the United States where the technology is dictating integration and multimedia mergers are commonplace. Newspaper groups, cable operators, telecommunications providers, broadcasters entertainment groups are all involved. However, unlike the United States, Europe has a more complex infrastructure where diverse national cultures, priorities, tastes and laws need to be addressed. But it is evident that "old information policies" in the form of public service television are not immune, are being challenged and a new approach sought, if merely for commercial survival. Whatever the sector, multimedia/ multinational merger is rife (see Table 4-2).

The attraction is obvious. The European market is lucrative and has potential for substantial growth. Europe is home to four of the world's largest telecommunications companies (37)(see Table 4-3).

Table 4-2. Examples of Multimedia Mergers

Country	Company (ies)	Venture
France	French television channel TF1/ FRANCE TELEVISION	European digital service (38)
Germany	Vebacom/ARD	Data transfer 36 sites (39)
Italy	Istituto Imobiliare Italiana S.p.A/ Banca Nazionale di Lavoro/ British Telecom + 5 other banks	6% Mediaset S.p.a. TV (40)
Italy	IBM/Stet, Italy's state telephone monopoly	Joint venture (41)
France/ Germany	Deutsche Telekom/ France Telecom	Joint venture (42)
The Netherlands/ Sweden/ Spain	Dutch, Swedish and Spain's Telefonica	Joint Venture (43)

Table 4-3. Top European Carriers in Relation to U.S. Equivalents

Operator (country)	Revenue (U.S.$ billions)
AT&T (United States)	43.4
Deutsche Telekom (Germany)	38
France Telecom (France)	28
British Telecom (U.K.)	21.3
Telecom Italia (Italy)	18.0
GTE (United States)	17.4
BellSouth (United States)	16.8
Bell Atlantic (United States)	13.8
Source: (44)	

The U.S.

The American transition towards its information based economy also took place in the early 1980s. As outlined in Chapter 1, the Internet played a significant and vital role, particularly in international telecommunications but, as in Europe, the development of cable television and telephony was significant.

The first step was the dismantling of the telecommunications giant AT&T. While it had a number of small competitors, it exerted enormous power. The company became embroiled in an anti-trust suit, the outcome of which would change the U.S. telecommunications industry.

"The testimony and the documentary evidence adduced by the government demonstrate that the Bell system has violated the antitrust laws in a number of ways over a lengthy period of time. . . the evidence sustains the government's basic contentions, and the burden is on defendants to refute the factual showings made in the government's case-in-chief"(45).

Judge Harold Greene became a principal player in a new regulatory structure which changed the U.S. telecommunications industry. His progressive involvement in U.S. telecommunications policy reflected the complexity of the new industry and the regulation established to police it. The judgment was the beginning of the end of one of the longest cases in U.S. antitrust history, filed against one of the biggest companies in the world, American Telephone & Telegraph (AT&T), the giant of the U.S. telecommunications industry.

The judgment effectively set the political agenda. During the following months, options for compromise seemed to elude AT&T while the Department of Justice, prosecuted what it considered to be a breach of the Sherman Antitrust Act of 1890. After eleven months in court AT&T, convinced that it could not win the case, agreed to an out of court settlement. The agreement was disclosed at a press conference, on January 8 1982, at the National Press Club in Washington. The covenant, to be approved and amended by Judge Greene, determined that the company would dispose of three quarters of its assets and some two thirds of its employees (46).

While it would take two years to take effect, the corporation had agreed to divest itself of the local Regional Bell Operating Companies (RBOCs) which ran the country's local exchanges, (some U.S.$112 billions of assets were to be transferred to them) settling the eight year law suit that had cost U.S.$360 millions to try defend (47). After, what appeared to be numerous changes of direction, the divestiture of the RBOCs had become Justice's favored option.

What was created, at least in theory, was a model which would separate the monopoly part of the network from that which could invite competition. AT&T would maintain its long distance business, its manufacturing arm in Western Electric and its research and development facility in Bell Laboratories.

Table 4-4. Regional Holding Operating Companies (RBOC)/ Bell Telephone Companies

Ameritech	Illinois Bell Telephone Co.
	Indiana Bell Telephone Co.
	Michigan Bell Telephone Co.
	(The) Ohio Bell Telephone Co.
	Wisconsin Telephone Co.
Bell Atlantic/	New Jersey Bell Telephone
	(The) Bell Telephone Co. of Pennsylvania
	(The) Chesapeake & Potomac Telephone Co.
	(The) Chesapeake & Potomac Telephone Co. of Maryland
	(The) Chesapeake & Potomac Telephone C. of Virginia
	(The) Chesapeake & Potomac Telephone Co. of W.Virginia
	(The) Diamond State Telephone Co.
Bell South/	South Central Bell Telephone Co.
	Southern Bell Telephone & Telegraph Co.
Nynex/	New England Telephone & Telegraph Co.
	(The) New York Telephone Co.
Pactel/	Bell Telephone Co.of Nevada
	Pacific Telephone & Telegraph Co.
Southwestern/	Southwestern Bell Telephone Co.
U.S. West/	Northwestern Bell Telephone Co.
	Pacific Northwest Bell Telephone Co.
	(The) Mountain States Telephone & Telegraph Co.

Source: Company annual reports 1990

While the agreement created a climate of unprecedented competition in the long distance market previously controlled largely by AT&T, it also spawned a complex telecommunications regulatory structure.

The case straddled three different administrations (1974) [Nixon/Ford,Carter, Reagan] and the tenures of five different Attorneys General (48). As early as 1904, AT&T had faced the same issues that had inspired the Department of Justice, namely those arising from the interconnection of other telephone networks. By 1913, AT&T was heading for its first antitrust suit. It promised to curb its predatory purchasing of independents, to dispose of Western Union, its telegraph subsidiary, but otherwise it remained intact.

That history seemed to convince the Department of Justice that changing the entire structure of the industry was fundamental. Its views echoed those of a major long distance rival, Microwave Communications Inc.(MCl), which had sued AT&T over interconnection, winning substantial compensation. [U.S.$1.8 billions eventually settled at U.S.$118 millions after appeals] (49). MCI was pushing for a major reconstruction of the indU.S.try, arguing public good to support its commercial case.

The final settlement incorporated the terms of another antitrust suit, raised in 1949 and settled in 1956--the agreement resulting from political pressure successfully exerted on the Department of Justice by the Eisenhower White House. By the terms of the 1956 settlement the corporation promised not to enter the computer business or cable television. The circumstances surrounding the 1956 settlement, some suggest, haunted the Justice Department and contributed to its tough stance nearly 30 years later (50).

Curiously, although the politics of the Reagan Administration was sympathetic to AT&T, only Defense Secretary Caspar Weinberger gave any spirited support to the corporation, arguing that national security demanded it remain intact. Both the Attorney General William French Smith and Deputy Attorney General Edward C. Schmults stood aside, having earlier disclosed previous commercial associations with AT&T (51). Whatever the political motives at Justice, AT&T eventually capitulated, convinced that it couldn't successfully defend the suit .

Judge Harold Greene scrutinized the new agreement (Consent Decree) following the procedures dictated by the Antitrust Procedures and Penalties Act, 1974 (Tunney Act). The main thrust of the Act was to give Greene the power to amend the Consent Decree, to determine whether the proposed agreement was in the public interest and to police it in the years ahead (52). "The Tunney Act required that any proposal for a consent decree submitted by the United States in an antitrust proceeding be filed by the court . . . any written comments relating to the proposal and responses by the government also had to be filed with the court"(53).

More than 600 interest groups submitted their findings to Greene's court. On August 24, 1982, the court delivered what became known as the Modification of Final Judgment/Modified Final Judgment (MFJ)/Consent Decree, which was ratified by the Supreme Court the following year (54).

A new era in U.S. telecommunications had dawned. AT&T was now free to compete in the computer and other unregulated businesses while the RBOCs were to be excluded from four lines of business--information services, equipment manufacture, inter-exchange (long distance) and non-telecommunications businesses.

By January 1984 the divestiture had taken place, creating a model which promised to open the U.S. long distance telecommunications market to competition but also, unwittingly, forging a complex policing system which included Judge Greene, the individual state Regulatory Utility Commissioners, the FCC, the Justice Department and the U.S. Court of Appeals.

Few envisaged the complexity of the regulatory system but it seemed to provide a blend of checks and balances that ensured, at least in theory, that law and justice prevailed, each participant empowered by some Act of Congress.

But it soon became obvious that the FCC felt it had been given a subordinate role. So did its supporters. That became evident in an early piece of legislation, in 1986, designed to change the regulatory structure.

> Legislation effectively would give FCC authority to grant RHCs waivers to enter now-restricted lines of business by including consent decrees in 1934 Communications Act. FCC then would be required to approve new federal rules identical in substance to consent decrees. Idea is to get Justice Dept. and Judge Harold Greene of U.S. Dist. Court, D.C., out of business of regulating telephone industry, was prompted by Attorney Gen. Meese, according to sources.(55)

The Commission had been established for that very purpose, given authority by the Communications Act 1934. The agency would have the authority, said the Act, to define and implement national policy and could even overrule the state regulators when their preferences were likely to upset federal strategy. It is an issue which has festered, still unresolved, for years at the FCC. It is a view, reflected in the proposed telecommunications legislation which has just been passed by Congress.

The legislation is to take Greene out of the telecommunications business by transferring whatever is left of the MFJ once the new competition environment is in place where the RBOCs can provide video and long distance. But the proponents of the legislation wanted Greene relieved of his duties which have molded telecommunications policy for nearly 15 years. "Judge Greene has played an influential, and controversial, role in developing telecommunications policy as overseer of the historic antitrust consent decree that broke up the AT&T telephone monopoly"(56).

The Department of Justice, too was enforcing the will of Congress through the Sherman Antitrust Act 1890. It was to ensure that the RBOCs committed no breach of antitrust law and that the terms of the Consent Decree were honored.

Similarly, Greene was policing Congressional policy too, through the public scrutiny requirements of the Tunney Act. But, on ratifying the decree, his job had not finished.

> Jurisdiction is retained by this Court for the purpose of enabling any of the parties to this Modification of Final Judgment, or, after the reorganization. . . a BOC to

> apply to this Court at any time for such further orders or directions as may be necessary or appropriate for the construction or carrying out of this Modification of Final Judgment.(57)

Also, the States were in the front line of the regulatory process. The respective State Utility Regulatory Commissioners would monitor and approve local/state tariffs and services; the FCC would audit accounts, establish technical and structural guidelines and analyze, for approval, those prices the BOCs charged long distance carriers at the start and end of each call (access charges); while the Justice Department and Greene's court would police the Consent Decree.

But a more fundamental issue began to surface, challenging the very ethos of the new regulatory system (see below). Given the intricacies of the RBOCs activities, a number of questions would be raised about the efficiency of the regulation. These would challenge whether Greene had the staff to make assessments and value judgments that appeared to define national telecommunications policy, whether Justice was still enthusiastic about policing the MFJ and whether the States, despite their eagerness, had the skills or manpower to scrutinize the RBOCs' activities. But, above all, it was feared--particularly by Judge Greene--that the FCC did not have the resources to guarantee that its auditing procedures were adopted and followed (see below).

At the AT&T trial Bernard Strassburg, former head of the Common Carrier bureau at the FCC had painted a picture of a Commission frequently struggling with its political masters over resources. Greene used that evidence later to question whether the

FCC could function as a regulator. The evidence had convinced him that the Commission had not "and never has been capable of effective enforcement" (58).

As the RBOCs grew in stature, Greene's resolve became more marked. He maintained that the companies were so complex and their activities so entangled that anti-competitive practices were becoming extremely difficult, if not impossible, to detect. Even the General Accounting Office found that, under the best of circumstances, the limitations of resources at the FCC meant that it could only audit an RBOC once every sixteen years (59).

The effectiveness of The Department of Justice has also been challenged. A changing political scene convinced Greene that the Department was becoming reluctant to enforce the Consent Decree and that it had lost the fundamentalism it had demonstrated at divestiture (60).

But the RBOCs had been excluded from the Consent Decree agreed between Justice, AT&T and the Greene court. They had approached Greene who treated them, they thought, with derision and who dismissed their input as irrelevant.

From then, the RBOCs were resentful, and considered that they had been ill-treated and ignored. They were to harbor a feeling of injustice which was, in time, to bring them into direct conflict with their regulators (61).

The "Baby Bells," as they became known, were an independent legal entity in January 1984.

Initially, the state utility commissioners were nervous, fearful that within months they might have dozens of bankrupt local telephone companies on their hands. Consequently, they were to allow the companies to raise the local bills by 17 percent in that first year, a concession they soon began to regret as the RBOCs followed a course of ambitious expansion (62).

Soon, the RBOCs were thriving, cash rich, and seeking secondary investments. The state commissioners were now becoming increasingly concerned that the local telephone subscriber/ratepayers were not only funding this expansion but were likely to foot the bill if the ventures failed (63).

A complex set of accounting procedures, laid down principally by the FCC, was meant to keep the monopoly side of the telephone company divorced from its other activities, but the fears of the state regulators and consumer groups about cross-subsidization were becoming intense. "Since divestiture, all the Bell companies have positioned themselves to use their monopoly local ratebase as a cash-cow to finance potentially more profitable, unregulated business ventures. . . . Within two years of the announcement of the Bell breakup, the BOCs asked state regulators for approximately U.S.$20 billion in rate increases" (64).

The regulators were also concerned at what appeared to be the cavalier approach of some of the RBOCs to the MFJ. Almost immediately after divestiture, the New York Public Service Commission began a series of regulatory investigations directly related to

Nynex. There surfaced a corporate strategy which disregarded the ethos of the MFJ (65) (see below).

Two major cases were to bring the BOCs and the regulators into conflict. In October 1990 Nynex made a "voluntary U.S.$1 .4 million payment" to the U.S. Treasury for supposedly inflating the prices of telephone equipment sold by a subsidiary, Meco, an infringement detected by the FCC. The Commission also ordered that U.S.$35 million be refunded to subscribers. Nynex admitted no liability. The rules under which it had to operate were ambiguous, it claimed (66).

In February, 1991, U.S. West was fined U.S.$10 millions by the Justice Department for four violations of the consent decree--operating services and companies banned by the lines of business restrictions (manufacturing and information services). Judge Greene also demanded assurances that there would be no recurrence (67).

The Justice Department's criticism of U.S. West was stark. "U.S. West, more than any other party to the decree, took a public and private stance in opposing the decree. The department believes that this attitude increased the risk that the decree problems would arise within the company" (68).

Greene had stipulated, at divestiture, that Justice conduct a study every three years to determine whether the restrictions on the lines-of-business were still relevant. In the first (and only) Triennial Review, as it became known, conducted in 1986 and in published 1987, Justice reversed policy. It recommended that the restrictions on manufacturing and information services be lifted and that the RBOCs be given more latitude in inter-exchange and non-telecommunications lines of business. Now, Justice was almost in line with the RBOC's thinking.

Greene rejected the recommendations made in the review - conceding that the RBOCs could carry information services but not supply them. For the companies, though, it set a new agenda for Capitol Hill and the Courts of Appeal. It effectively challenged the wisdom of the MFJ and afforded the BOCs the opportunity to canvass other political opinion, confident that the principal architect of the antitrust suit, the Department of Justice, had now publicly changed its mind.

The RBOCs embarked on a highly visible campaign to have the restrictions of the MFJ reversed. They have challenged Greene and the MFJ, in court through the standard procedures, but primarily in Congress where, at least in theory, the entire Consent Decree can be made void.

But tearing up the MFJ with the authority of Congress appeared an easier theoretical solution than a practical one. On the whole, Congress showed a marked reluctance to pass any substantive legislation on telecommunications, hampered by its diverse vested interests. The contentious issues were left to be resolved by the FCC and the courts.

The model created in the wake of the AT&T divestiture which gave birth to the RBOCs and their regulators, each empowered by some Act of Congress, was unique. On the surface, at least, what seems to have resulted was a chaotic and unwieldy regulatory system; a policy that had no direction, questionable purpose and a monument to an over-zealous interpretation of antitrust legislation. "Divestiture must be looked on as an enormous gamble. It is part of a general experiment in competition as a way of organizing previously regulated industries," Peter Temin/Louis Galambos (69).

But by the end of the 1980s a new climate was to isolate Judge Harold Greene, who has not been easily swayed by the RBOCs arguments of the economies of scope and scale, but remains, almost stubbornly, determined that the companies, which still control more than 95 percent of the local telephone traffic, are prevented from exploiting that monopoly. "The court will not even consider the substantive merits of a waiver request seeking permission to provide inter-exchange services until such time as the Regional Holding Companies lose their bottleneck monopolies and there is substantial competition in local telecommunications service"(70).

The ethos behind the new U.S. telecommunications legislation, passed in February 1996, reflected a political commitment which determined that the regulatory model devised at the AT&T divestiture is obsolete. An unbridled telecommunications industry is supposed to emerge driven by the market.

According to the proponents of that new climate, competition not regulation is the best way to spur innovation and to develop new services. More competitive markets advance U.S. technology, create jobs and investment opportunities while improving national competitiveness and economic development (71).

Cable Television

There was a major transition on the U.S. cable television front too. Cable television rates, once subject to broad control at the local or state level, were deregulated in late 1986, when the Federal Communications Commission's (FCC) effectively implemented the Cable Act of 1984 (Cable Communications Policy Act). But it created substantial problems for consumers as rates increased and resulted in pressure on Congress to take remedial action.(see below). The Act gave the FCC authority over cable television and also prohibited telephone companies from supplying video to the same subscriber base, a restriction termed the cable-telco prohibition. Earlier, in 1978, a "pole attachment provision" had been added to the 1934 Communications Act empowering the FCC to control the rates cable companies were charged for poles and ducts, leased from utilities and telephone companies.

The 1984 Cable Act purported to spur competition within the cable industry. Instead it allowed cable to exploit monopoly power, contrary to the political climate of the 1980s when competition and low costs were the by-words. Even before the full effect of de-regulation took effect (1986), there were discussions about how to legislate for increased competition, although the financial feasibility of competitive cable systems was questionable even in the largest market.

The cable industry, once favored by Capitol Hill, saw its political fortunes turn sour in 1992. As consumer complaints mounted, so, too, did legislative attempts to solve the problem. In 1989, the efforts by (then) Senator Al Gore (Dem. Tenn.) and Representative Rick Boucher (Dem. Va) were indicative of the political mood. The Gore-Boucher bill, known as the "Cable Competition Act," attempted to regulate cable rates and to lift the telephone-cable cross ownership restrictions, established by the FCC in 1970. The legislation failed, scuttled by heavy White House opposition and an active cable lobby.

A year later, a bill addressing only the issues of re-regulating cable rates and imposing programming restrictions was introduced as the "Cable Consumer Protection and Competition Act of 1990." Despite moving easily through the House, the bill was filibustered in the Senate by Senator Tim Wirth (Dem. Colo.), whose constituency includes the head office of cable giant TCI and a number of other cable operators.

A General Accounting Office report, published in July 1991, damaged the cable case (72). It concluded that in the four years since deregulation the charge for the lowest price cable service had risen by 56 percent, far exceeding the inflation rate.

The industry was now in serious political trouble. The wisdom of non-regulation was challenged as was that of monopoly. For ten years the U.S. had been convinced that competition would be the economic engine which would drive telecommunication services towards efficiency. The level of competition seen in the telecommunications long distance business was in marked contrast to the protected monopolistic cable television industry. Many legislators who had supported the 1984 Act were no longer sympathetic. "Standard Oil and the railroads may have been the 'trusts' of the past. The cable companies are the trusts of today," Senator Jack Danforth (73).

The FCC tried to appease Congress in June of 1991 by unanimously voting to change its definition of "effective competition" as contained in the 1984 Act. Under the Commission's rule, in areas where 3 signals were available, cable system were free of rate regulation (74).

The broadcasters, threatened by the advertising revenues being siphoned by cable, were also determined to exploit the political atmosphere and push for their own changes. So, the public interest dimension of cable was to be debated once more. Consumer groups found a voice in partnership with the broadcasters (75).

Inevitably, the anti-cable debate condemned the industry for exploiting broadcast programming, while cable argued that re-regulation would stifle innovation, would inflict irreparable damage on an embryonic industry, and threaten existing jobs while thwarting the prospect of new ones (76).

The broadcaster/consumer alliance won the day. The 1992 Act was passed by Congress only to be vetoed by President Bush. However, two days later, that veto was over-ridden by Congress (77).

The essence of the new Act imposed local and federal regulation on cable rates. The legislation required the Federal Communications Commission to establish national guidelines for basic cable-television rates. The FCC would then regulate rates itself or allow local authorities to do so provided they followed the national guidelines (78).

There were to be conflicting views with regard to the success of the legislation. For example:

Richard M. Kessel, Head of the New York State Consumer Protection Board said: “Many consumers in our state have experienced minimal reductions and some consumers, a significant number, haven't gotten any reductions at all. . . . I doubt the average cable customer could buy a Happy Meal at McDonalds with the savings they get from rate regulations” (79).

While the FCC ‘s survey of cable television rates claimed that on average, regulated revenues from cable services had decreased, programming charges had declined and that equipment and installation charges had been reduced substantially.

The FCC had been bullish, estimating that the savings accruing to consumers as a result of the 1992 legislation would be some U.S.$3 billion a year (80). However, in spite of the FCC's figures, consumer complaints about pricing and service continued to flood the Commission, forcing them to become regulators where local authorities had opted out, putting even more strain on an under-resourced FCC. As of June, 1994, "10,200 Americans have complained to federal regulators about the price of their cable TV. . . To date, the agency hasn't resolved a single one" (81).

In this chapter the background to the current political mood surrounding telecommunications in Europe and the United States has been examined.

In the U.K., the principal motive behind liberalizing telecommunications was to remove it from the control of government agencies and free it from the public purse. Initially, only limited competition had been contemplated with one long distance telecommunications competitor, Mercury, and competition from cable in local telephony. Since 1990 others have been licensed, largely privatized public utilities like gas, water and electricity. Cable had a very shaky start in Britain in the early 1980s, given monopoly status. Entertainment was supposed to drive the technology and fund other information services. But only after massive investment by the American RBOCs in the mid to late 1980s has it become a credible tier of competition in local telephony. Both the U.K. cable and telephone industries are now models for the other EEC member states.

However, in the United States the breakup of telecommunications giant AT&T was the goal and virtually unlimited competition in the long distance market has been introduced since that divestiture in 1984. Monopoly cable franchises were to precipitate two pieces of legislation to protect consumers in 1984 and 1992. But as new legislation in telecommunications is about to be implemented in February 1996, the development of these two sectors like the same in Europe is crucial to the creation of an information infrastructure.

In the next and last chapter, the issues discussed in this and the previous three chapters will be examined and their perspective and relevance to information policy in Europe and the United States analyzed.

Notes

1. Snoddy, Raymond. "Survey of International Telecommunications." Financial Times 3 Oct. 1995: XXXV11. Online. Nexis. 4 Oct. 1995.

2. Dyson, K., Humphreys, P., Negrine, R., and Simon, J.P. Broadcasting and New Media Policies in Western Europe London: Routledge, 1988: 65

3. Reith, John. Broadcasting Over Britain. London: U.K. Government, 1924.

4. Dyson, Humphreys, et al 87.

5. Peacock, Alan. Report of the Committee on Financing the BBC. London: U.K. Government: HMSO, 1986.

6. Peacock 133.

7. Information Technology Advisory Panel (ITAP). Cable Networks. London: ITAP, 1982.

8. U.K. Government. The Development of Cable Systems and Services. London: U.K. Government: HMSO, 1983.

9. U.K. Government, Development of Cable Systems and Services 8.

10. Beesley, Michael. The Future of Telecommunications. London: Institute of Economic Affairs, 1989: 7.

11. Carsberg, Bryan. Office of Telecommunications (Oftel). Competition and Choice: Telecommunications Policy for the 1990s. London: Oftel, 5 March 1991: 1.

12. Ungerer, H., and Costello, N.P. Telecommunications in Europe Brussels: EEC, 1990: 21.

13. "Cable hopes deferred." Financial Times 1 Mar. 1985: 12. Online. Nexis. 10 Jan. 1996.

14. Ungerer and Costello 26-30.

15. "Inside BT: concert virtual network service." Inside Telcom 13 Feb. 1995. n. pag. Online. Nexis. 10 Dec. 1995.

16. Ungerer and Costello 26-30.

17. Ungerer and Costello 28.

18. "House of Lords rules in Mercury's favour in dispute with regulator." Computergram International 10 Feb.1995. n. pag. Online. Nexis. 10 Jan. 1996.

19. U.K. Government. Competition and Choice:Telecommunications Policy for the 1990s, A Consultative Document. London: HMSO, Nov. 1990: 4.

20. U.K. Government, Competition and Choice 4.

21. Ungerer and Costello 83, 89.

22. Gribben, Roland. "Public's share of BT issue may rise." Daily Telegraph 4 Dec. 1991: 22. Online. Nexis. 14 Jan. 1996.

23. "Cable hopes deferred." 12.

24. Whitten, Patrick. "Does broadband need tv for commercial success? High bandwidth applications." Communications International July, 1991: 4. Online. Nexis. 10 Jan. 1996.

25. Kupfer, Andrew. "Information Technology/ Special Report." Fortune 18 Sep. 1995: 175. Online. Nexis. 10 Oct. 1995.

26. Hayes, Dawn. "U.S. West makes bid in Italy tv." Bloomberg Business News/ The Phoenix Gazette 12 Sep.1995: B3. Online. Nexis. 30 Sep. 1995.

27. Hayes B3.

28. "Business view Flextech's boat comes in for Scottish Television." The Scotsman 1 Sep.1995: 22. Online. Nexis. 30 Sep. 1995.

29. "Microsoft taps U.K. market for Interactive Services trial." European Media Business & Finance 20 Nov. 1995 n. pag. Online. Nexis. 30 Nov. 1995.

30. "Microsoft taps U.K. market for Interactive Services trial." n pag.

31. "Microsoft taps U.K. market for Interactive Services trial." n pag.

32. Wachman, Richard. "Cable gears up for telecoms big bang." London Evening Standard 19 July 1995: 33. Online. Nexis. 10 Jan. 1996.

33. "For Cable and Wireless, Gains and Exit Date." New York Times 17 Nov.1995: D18. Online. Nexis. 16 Jan. 1996.

34. Bannister, Nicholas. "The brawl that was waiting to happen." The Guardian 28 Nov.1995: 20. Online. Nexis. 30 Nov. 1995.

35. Bogler, Daniel. "Money-go-round: attractive number despite the gloom shares for income." Daily Telegraph 3 June, 1995: 12. Online. Nexis. 12 Jan. 1996.

36. Handford, Richard. "Americans in Europe; American telephone companies may be the operators of Europe's largest telephone networks by the end of the century; a fiber optic future." EuroBusiness Sep.1995: 58. Online. Nexis. 20 Nov. 1995.

37. Cooper, Charlotte. "Focus-Berlusconi completes phase two of media sale." Money Report Reuters 29 Dec.1995. n. pag. Online. Nexis. 8 Jan. 1996

38. "TF1/France TV join forces to develop digital satellite." Tech Europe 1 Dec.1995 : 110. Online. Nexis. 8 Jan. 1996.

39. "Germany licenses telecom firm's alternative broadband technology." Bureau of National Affairs (BNA) International Business & Finance Daily 30 Nov.1995. Online. Nexis. 12 Dec. 1995.

40. Cooper n. pag.

41. Marshall, Tyler. "Old World on brink of a telecom revolution." Los Angeles Times 22 Oct.1995: D1. Online. Nexis. 30 Oct. 1995.

42. Cooper n. pag.

43. Cooper n. pag.

44. Cooper n. pag.

45. Greene, Harold H. United States of America v American Telephone and Telegraph; Western Electric Company, Inc.; and Bell Telephone Laboratories, Inc.; Civil Action 74-1698. Washington: DC District Court, 11 Sep.1981: 73

46. Thayer, Richard. AT&T, statement. Washington: AT&T, Sep.1991.n. pag.

47. U.S. Government. Department of Justice. Transcript of Consent Decree Press Conference, National Press Club. Washington: DOJ, 8 Jan.1982: 19.

48. Zeglis, John D. AT&T submission to U.S. Senate Subcommittee on Communications, Committee on Commerce, Science and Transportation. Washington: U.S. Congress, 25 Apr.1990: 20.

49. Worthington, John R. Statement from MCI. Washington: MCI, Sep.1991. n. pag.

50. Cole, Steve. The Deal of the Century, The Breakup of AT&T. New York: Touchstone, 1986: 59.

51. Steve Cole 187.

52. Zeglis 21.

53. Temin, Peter, and Galambos, Louis. The Fall of the Bell System. Cambridge: Cambridge University Press, 1987: 280.

54. Greene, Harold H. United States of America v Western Electric Inc. et. al., Civil Action 82-0192. Washington: DC District Court, 25 Jul.1991: 2.

55. "On consent decrees; Dole bill set for delivery early this week as RHCs prepare strategy." Communications Daily 9 Jun.1986: 1. Online. Nexis. 8 Jan. 1996.

56. Maclachlan, Claudia. "A slow move into brave new world." The National Law Journal 1 May 1995: A1. Online. Nexis. 9 Dec. 1995.

57. U.S.vWestern 6.

58. U.S.vWestern 27.

59. Kimmelman, Gene. Consumer Federation of America. Statement to House Economic and Commercial Subcommittee, on AT&T Consent Decree. Washington: U.S. Congress, 1 Aug.1991: 21.

60. U.S. Government. Triennial Review. Washington: Department of Justice, 1987. n. pag.

61. Bruce, Robert R., Cunard, Jeffrey P., and Director, Mark D. From Telecommunications to Electronic Services. New York/London: Butterworth, 1986: 188.

62. Burgess, John. "The AT&T breakup, five years into the new age of telephones." Washington Post 28 Dec.1988: PA1. Online. Nexis. 10 Sep. 1995.

63. Kimmelman 5.

64. Kimmelman 5.

65 Bradford, Peter. New York Public Service Commission. Testimony before U.S. Senate Sub-committee on antitrust, Monopolies and Business Rights, On Lifting Manufacturing Sanctions. 21 May 1991: 5.

66. FCC Week Volume 10. No:23. 10 June 1991: 10.

67. FCC Week Volume 10. No:7. 25 Feb. 1991: 1.

68. FCC Week Vl.10/7:7,8.

69. Temin, Galambos 365.

70. Zeglis 23.

71. U.S. Congress. Report on Pressler Telecommunications Bill, Amendment to the Communications Act 1934. Washington: U.S. Congress, Mar.1995.n. pag. Online. WWW. http://bell.com. 10 Dec. 1995.

72.General Accounting Office. Survey of Cable Television Rates and Services. Washington: GAO, 1991. n. pag. "National Cable TV Association statement on GAO report." U.S. Newswire 18 July 1991. n. pag. Online. Nexis. 20 Sep. 1995.

73. Danforth, Jack. "We have the worst of both worlds, Sen. Danforth writes." Telecommunications Policy Briefing , Roll Call, No:39. 19 Apr. 1992. n. pag. Online. Nexis. 4 Oct. 1995.

74. Communications Daily 1 Dec.1986: 10. Online. Nexis. 20 Oct. 1995.

75. "Cable besieged." Washington Post 14 Feb.1992: A24. Online. Nexis. 10 Sep. 1995.

76. Flint, Jow. "Cable rate hikes not excessive, study claims; industry-backed study says once-regulated prices have simply caught up with cpi; consumer price index." Broadcasting 13 Apr.1992: 39. Online. Nexis. 8 Sep. 1995.

77. Cable Television Consumer Protection and Competition Act of 1992. n. pag. Online. WWW. http://www.fcc.gov/csb/html. 10 Sep. 1995.

78. Federal Communications Commission. Final Report on Cable Rate Survey. Washington: FCC, 15 July 1994. "FCC cable rate survey shows decline in rates for consumers". Daily Report For Executives 15 July 1994: A134. Online. Nexis. 10 Sep. 1995. Macdonald, Patrick. "Cable tv's changing; here's how and why." Seattle Times 14 Mar. 1993: A1. Online. Nexis. 20 Nov. 1995.

79. Thierer, Adam D. "Why cable tv rate regulation failed; Cable Consumer Protection and Competition Act of 1992." Consumers' Research Magazine Feb. 1995: 15. Online. Nexis. 10 Mar. 1995.

80. Susens, Steven. "Clement hopes to derail rural cable rate increases." States News Service 1 Aug.1995. n. pag. Online. Nexis. 10 Sep. 1995.

81. Arndt, Michael. "Technological torrent shorts FCC circuitry." Chicago Tribune 19 June 1994: Business 1C. Online. Nexis. 4 Oct. 1995.

CHAPTER 5

SUMMARY AND CONCLUSIONS

This research has examined the routes taken by the United States and Europe since the 1980s as they sought to liberalize their domestic telecommunications markets. It is meant to contribute to the understanding of the priorities and perspectives of the different continents and the political forces which then defined their respective telecommunications infrastructures. It also shows how those measures and accompanying political thought inspired further change in the next decade.

What the research also highlights is the unwitting influence which many unrelated events have had on the directions taken by the continents. The policies derived in the 1980s, which determined the routes taken a decade later, were industrial strategies dictated by political perspectives which had not even comprehended information based economics. They had been developed by political thought which could not have understood the needs of their societies in the 1990s. Yet, it was these apparently unrelated domestic telecommunications policies which laid the foundations for radical change in the mid 1990s. By then, an information based economy was a recognizable concept which had been embraced by the respective powers of Europe and the United States.

This research has also sought to offer a comparison between the approaches adopted by the continents in order to add another dimension to comprehending the nature of the decisions. At first sight, Europe would appear to have social policies more pronounced than the United States. In the United States, not unexpectedly, commerce and competition have had high political priority. Yet, as has emerged from the research, while the routes taken in the 1980s by the respective governments had diverse purpose, within a decade their goals were converging.

That convergence was precipitated by an amalgam of circumstances; commercial, political and technical. By the 1990s, industry and trade had global perspectives. Products would be made for world markets supplied by international pools of labor, raw materials and investment. Information would be needed for that world trade as would cheap and efficient telecommunications networks (see Chapter 1).

With this as a political backdrop, there would emerge the idea of an infrastructure which would knit the telecommunications sectors inside the United States. It was termed the U.S. Information Superhighway. While it was to become a cliché of Capitol Hill and the White House, within months of it first being muted, it was a simple graphic representation of what the new telecommunications infrastructure would or should be. Sectors which had barely overlapped, kept apart by their technologies and their respective regulations, were to be allowed to converge. Cable, telephony and broadcasting were the primary ingredients of that Information Superhighway (or National Information Infrastructure). How they would be allowed to develop themselves and in relation to each other were to be the major features of an Information Superhighway policy. This research focuses on cable and telephony.

In Europe the convergence was equally marked. The 1980s brought a new dimension to Europe with the signing of the Maastricht Treaty, in 1992, which would determine that the continent had a different perception of itself and its goals. What was once the European Economic Community (EEC) with the sole purpose of enhancing trade between its member states was to have other, far more ambitious, goals.

Those ambitions determined that the continent be a political entity in energy, defense, transport and economics in addition to trade. That meant the creation of an infrastructure which would demand advanced communications. A telecommunications policy needed to be derived, and targets and goals set, to allow the Community the opportunity of realizing those ambitions (see Chapter 2).

So, for Europe too, information was as crucial to commerce. An Information Society was now the continent's new goal with a network of advanced telecommunications. But in Europe that same network would have its other purpose, namely to be a cohesive force molding the diverse European nations into one.

The research is also meant to show how these two distinct networks could be joined. Each domestic policy reflects the values and priorities which influence international policy. While domestically, both continents seek to develop seamless networks which will knit their different telecommunication sectors into one, so each country desires to blend them into a global whole; the successful interconnection of their respective networks creating the infrastructure of the Global Information Infrastructure.

In that regard major legislation was passed in the United States while concluding this study, February 1996. While it was not the intention of the researcher to include new data at this stage, the issues and the political intent surrounding the legislation have been discussed and alluded to in the previous chapters. It would be appropriate then if the legislation was discussed in this conclusion and compared to anticipated European measures. This would be valuable in assisting the direction of further scholarly study in this area.

Research Findings

During the 1980s, the United States and Europe adopted radical policies which would irrevocably transform their telecommunications industries. In Europe, Britain was the first to take those steps, unwittingly becoming the stalking horse and role model of the European Economic Community. These radical strategies dismantled structures which had been in place for more than fifty years and abolished some of their accompanying practices. They created new regulatory structures but with little understanding of how they would work.

In the United States the dismantling of AT&T was a vaguely defined political goal. Vacillations and changes in priorities were evident in the time the strategy took to evolve. It had been pursued during three White House Administrations. That indecision demonstrated uncertainty of what the policy should be and contained no vision of the telecommunications era of the 1990s. Instead it simply marked the conclusion of an anti-trust suit, actively prosecuted by the Department of Justice.

What emerged was a Consent Decree, the content determined by AT&T and the Department of Justice, under the scrutiny of the Judiciary. It separated monopoly businesses from those which would invite competition, a major departure from the previous ideology that telecommunications was a natural monopoly. The local telephone networks were to be the province of the seven Regional Bell Operating Companies (RBOCs) while the long distance market would invite competition.

Predictably, the competition in the long distance market drove prices down - by about 40 percent in real terms over 10 years. But unpredictably, the Bell companies, termed the Baby Bells and considered vulnerable at the time of the divestiture, became awash with cash seeking investments overseas, free from the constraints imposed on them at home. It gave the companies international profiles and experience which, arguably, influenced their demands from domestic policy makers in the ensuing decade. The terms of the AT&T breakup prevented the RBOCs from offering long distance, information services, manufacturing and non-telephone businesses.

Those constraints and the negative response of the RBOCs to them also had substantial political fallout. That resentment inspired the RBOCs to lobby Congress to set the political agenda for a further change in telecommunications legislation.

The push for change was assisted by the Federal Communications Commission (FCC) which had been given a minor role in the regulatory process. Many in Congress also believed that telecommunications policy was being dictated by the judicial arm of the new regulatory structure.

These attitudes substantially influenced the content of the new U.S. telecommunications of 1996. This legislation represented a new climate in telecommunications competition and laid the foundations for the creation of the U.S. Information Superhighway.

The U.K. adopted a similar strategy. Again, no vision of a liberal telecommunications industry was evident in the development or pursuit of the policy. Instead, it was the political ideology of Premier Margaret Thatcher to dismantle state-owned industries and return them, where possible, to the private sector. Telecommunications was among them. Unlike the United States, only one competitor was allowed which, arguably, supports the contention that the goal was not the full liberalization of the telecommunications market. But, again unwittingly, it created a new climate during the 1980s which gave European telecommunications a different perspective and inspired the European Commission to devise its first policy document; the first plank of the infrastructure for Europe's Information Society.

Comparison of Early American and European Policy

Both the European and the American policies in telecommunications were by-products of other industrial strategies. Arguably, they were not the products of telecommunications visionaries but nevertheless meant that within the next decade both continents created legislation with a visionary goal--designed for telecommunications to stimulate an information based economy.

The earlier world of telecommunications had been the telephone. The activities of companies in the related industries were defined and constrained by the contours and limitations of the respective technologies. The regulations and regulatory structures reflected that simplicity. But in the 1980s, the same digital electronics responsible for the spread of cheap computing power, blurred the divides between these industries. Consequently, the regulations which governed the sectors at best were outdated, or at worse, obsolete.

Technology had determined telecommunications as a natural monopoly; the scale of investment and the expected return would determine that to be the case. That had been the widely held view until competition in the U.S. long distance market took effect. While the market was still dominated by AT&T in 1996, the competition, with the exception of MCI and Sprint, leased lines from AT&T and still made profits. Cable television added another dimension. The growth of the technology in the United States and Europe has provided a potential second tier of competition at the local level. The new U.S. legislation seeks to encourage that as does the policies of the European Commission.

International Dimension

Internationalism is now an essential feature of commerce and trade. International sources of raw materials, labor and expertise are exploited. The demands made on communications to meet those commercial goals are also international.

For the United States the international dimension of telecommunications had provided serious diplomatic problems for two decades. The sheer volume of telephone traffic generated by U.S. commerce and trade also created a burgeoning annual trade deficit. Early relations with the International Telecommunication Union foundered badly in the U.S.'s attempt to alter international tariffs and how they were measured.

But what was more significant was the recognition by the policy makers in the United States that telecommunications strategies could not be tailored for domestic consumption alone. Congressional Committee reports pilloried the country's efforts to consolidate a policy and reserved particular criticism for the government agencies whose diverse goals and policies often pulled the United States in opposite directions.

But by the early 1990s the United States was no longer alone in its perception of international telecommunications. The sector had become a major source of negotiations in the new round of GATT/WTO talks and the issues were put aside to produce specific agreement by the spring of 1996. These talks are significant because they represent a recognition by the GATT/WTO membership (a significant fraction of the international industrial community) that the status quo is no longer acceptable, that policies which only pursue domestic needs and priorities are obsolete and that telecommunications must now be recognized as having an important international dimension which requires a consensus policy. Twenty seven representatives have been meeting monthly in Geneva, (home of GATT/WTO), since September 1995 in anticipation of reaching an agreement by April 1996 (1).

The 1995 G7 summit in Brussels, hosted by the EEC, to discuss the concepts of the Global Information Infrastructure, was also used as a political forum to arrive at a consensus. The Americans sought to export the initiatives that have defined U.S. telecommunications domestic policy. Those five planks have now become the essence of U.S. international policy in telecommunications: private investment, competition, flexible regulation, open access and universal service.

In the 1980s Europe extolled the economic advantages of a united continent without trade or communications barriers. The European Commission, the driving force behind such policy directives, determined that the continent should evolve a strategy for telecommunications with an international dimension. While the member states' priorities would be respected, a new policy needed to be devised which could be uniformly implemented in 15 different countries and cultures. Diverse policies had hindered the economic growth of the Community, was the Commission's view, and they would continue to do so if nothing was done. Telecommunications policies which reflected only national values had caused high frontier tariffs, the major obstacles to trans-continental trade. Europe developed policies which would not only deal with the diverse cultures and political priorities of its member states in telecommunications but also forge a policy which would knit the Community into the fabric of international telecommunications.

The drives of both the United States and Europe were two prominent examples of the direction now being taken by industrial societies around the globe. Telecommunications was now permanently on the international political agenda.

The Internet

The Internet is a significant part of the international telecommunications equation. Its phenomenal growth on both continents coincided with the perception of networks in multimedia and international terms. It is arguable that the success of the network inspired this political process. What the Internet demonstrated was that without being constrained politically and geographically, cheap seamless international multimedia networks were possible.

In the U.S., the Internet, spawned from government research and then adopted by universities and research institutions, is now considered to be the economic bedrock of the next millennium, the catalyst to growth and prosperity. Certainly, its expansion in the 1990s bears witness to the impact the network is already having on U.S. society and commerce. The backbone of the U.S. Internet, the National Science Foundation Network (NSFNET) had been funded by government subsidy. That modest annual sum of U.S.$20 million, in 1995, had been withdrawn. The amount was insignificant but not the political intent. A clear political decision to change the profile of the network has been made. And while licensed carriers have always run the network under government contract, the network and its protocol, will now be an adjunct to the commercial sector.

It could be argued that the commercialization of the Internet is a primary option of government to wrest back control from the unregulated users of the network. Namely, that licensed carriers subject to some form of regulation, no matter how lax, would respond to commercial and political pressures in their home territories. That regulation would also need an international dimension. The sanctioning, if not the encouragement, of multinational mergers is consistent with that philosophy. Influence could be further exerted on international operations via the indigenous arm of any partnership. These rules are already in the making with the FCC laying down specific conditions for the international network created through the partnership of MCI, British Telecom, France Telecom and Deutsche Telekom. The European Commission also had to sanction the terms of this alliance.

While the Internet provided an unwelcome international dimension by highlighting the problems of control, it also illustrated that the network was an international product with an international culture. Fears have surfaced that the Internet and similar networks will be dominated by English, the language of computers, and by the United States the major industrial power in computers and telecommunications. They reflect the same fears, aired many times in Europe, that too many U.S. television programs are being broadcast. The European parliament voted, in February 1996, to insist on quotas on foreign television imports. It even hinted that the same rules might apply to new services on the Internet.

> The parliament, the EU's only directly-elected body, also agreed to tighten up restrictions on advertising and services such as teleshopping and to extend the scope of the rules to new media services. This could send a chill down those with most to gain from the growing information society. A coalition of 40 companies and trade associations from the threatened sectors wrote to members of parliament individually to urge them not to extend the rules to new services. They also said it was premature to extend the legislation to new media services like the Internet, pay television and teleshopping at a time when they were just starting to develop. Again there is fear that the Internet is the vehicle for anodyne international product that has no cultural flavor and is instrumental in suppressing those cultural diversities. That multimedia and multinational means international product. (2)

Comparison of the New Telecommunications Climate in the U.S. and Europe

This brief look at the current policy and recent legislation of the United States is not meant to introduce new argument to the research but to put into context the political intent discussed in the earlier chapters. It is meant to draw the work together and to enhance future research effort by arguing what is or is most likely to be the European response to the U.S. legislation.

Earlier Attempts

1995 saw the emergence of a new Republican dominated Congress. The attempt, the previous year, to replace the Communications Act of 1934, failed. The legislation had little prospect of support in the Senate as conflicting interests, including the Bell Companies, battled for last minute amendments.

So, it was to the new Congress at the turn of 1995, to don the mantle. The debates during the passage of the proposed legislation were echoes of 1994. The market it would create was to be competitive, deregulated and would ensure that advanced telecommunications and accompanying information technologies would be available to all Americans. In February 1996, the United States passed this telecommunication legislation.

What the legislation represented is as important as its content. Simply, the U.S. had introduced a legislative package which demonstrated its commitment to a new era of minimal regulation, removing the constraints it believed was inhibiting telecommunications since the divestiture of AT&T more than twelve years earlier. Cable television and the local and long distance sectors would be open to competition. But it also reflected the dissatisfaction of Congress with the existing regulatory structure which had seen the courts inadvertently determine telecommunications policy while reserving a minor role for the Federal Communications Commission.

New U.S. Legislation and the European Response

Universal Service

The experience of the United States in pursuing Universal Service is of particular significance, given it was sustained in the most competitive telecommunications market in the world. Given that both United States and Europe are in the process of opening their markets Universal Service is prominent on the political agenda.

Opponents consider Universal Service an expensive overhead which reeks of government interference in private industry. Minimum telephone service for all is a nebulous concept, they claim, difficult to define and almost impossible to implement. For those on the other side of that political divide, Universal Service is a fundamental building block of the European Information Society and the U.S. Information Superhighway. There is to be no two tier society, no 'haves and have-nots'.

The new U.S. legislation outlines a specific commitment to Universal Service but one which the Act acknowledges incorporates substantially more than basic telephone. A joint board, comprised of Federal and State representation will determine the implementation under the guidance of the Federal Communications Commission embracing quality, advanced services and support mechanisms.

A specific definition of Universal Service is also the task of the board.

> Consumers in all regions of the Nation, including low-income consumers and those in rural, insular, and high cost areas, should have access to telecommunications and information services, including interexchange services and advanced telecommunications and information services, that are reasonably comparable to those services provided in urban areas and that are available at rates that are reasonably comparable to rates charged for similar services in urban areas. . . . All providers of telecommunications services should make an equitable and nondiscriminatory contribution to the preservation and advancement of universal service.(3)

The European response is likely to emulate the U.S. model. Not only has Europe accepted the need for Universal Service across the continent, paying particular attention to the member states with high rural concentrations--Portugal, Spain, Ireland and Greece--but it has expressed a preference for adopting the U.S. model where all carriers contribute to financing the commitment. Another option, likely to be explored, is also a derivation of the American model. In the U.S., long distance carriers which contribute to the universal service fund also pay access charges to the local carriers for termination of a call. The Commission is likely to examine that option whereby a principal national carrier, like British Telecom in the U.K., will have the duty of providing Universal Service, but supported by charges made by to those who interconnect.

> The Commission reaffirms the fundamental importance of maintaining and developing universal service in the European Union, on the basis of a common minimum set of services and infrastructure. . . and the need for further development in that market, which established as a major goal for Community telecommunications policy the liberalization of all public voice telephony services, whilst maintaining universal service. . . . The financing mechanisms would be put in place at a national level, but within a framework set at a Union level. . . . The initial preference expressed is for Universal service funds.(4)

Mergers

The new U.S. political wave, which embraces competition and minimum regulation, endorses integration. Cable television, telecommunications groups, on-line providers and conventional broadcasters have all sought to exploit this ideology. The political attitude which drove Congress to pass the telecommunications legislation determined that the regulatory infrastructure of the previous decade and its bureaucracy, supposed obstacles to progress, be dismantled. The bill states: “The Commission shall seek to promote the policies and purposes of this Act favoring diversity of media voices, vigorous economic competition, technological advancement, and promotion of the public interest, convenience, and necessity"(5).

The U.S. multimedia mergers have another dimension. It is now multinational. The partnerships have significant presence in their own sectors but also seek to define new markets with international profiles. Once more integration is the hallmark. The divides between sectors, once defined by the frontiers set by the limitations of their respective technologies, are barely recognizable. One example is MCI's injection of U.S.$2 billion in News Corporation. The international tentacles extend even further, as British Telecom has U.S.$4.3 billion invested in MCI.

France Telecom, Deutsche Telekom and Sprint have also formed an international partnership. This alliance further reflects the congruity of the telecommunications policies being pursued by the USA and Europe.

The Department of Justice will continue to scrutinize mergers and anti-trust activity, although the political climate surrounding the new legislation would probably allow more latitude to potential partners.

It may be that the European Commission will not give as much latitude to these mergers as the United States. It is possible that multinational mergers between European and American companies will be scrutinized even more intently by the European Commission, given the ethos contained in the Maastricht Treaty, namely a united Europe determining fair competition without favor. "The European Commission is taking a harder line against cartels and other restrictive practices within the Union and is not hesitating to take on big businesses and member states over anti-competitive behavior. Karel Van Miert, the commissioner responsible for competition, has forced companies to scale down their merger plans as a condition for getting them cleared by the Commission"(6).

A fundamental issue is who will regulate in the U.S. and in Europe. One intent of the new U.S. legislation was to make the FCC the primary regulator. In Europe, France and Germany are considering creating specialized regulatory authorities, similar to the Oftel (Office of Telecommunications) of the U.K. But the European Commission is keen on having regulatory powers for the entire continent through its telecommunications directorate.

Privacy

The people of the United States have enjoyed freedoms not allowed the majority of the globe. The U.S. legislation and the new political climate may bring with it problems - ones which may undermine many of the basic liberties which the country has long enjoyed. They may be dangers, some blatant challenges, to freedoms of expression considered to be the rights protected under amendments to the U.S. Constitution.

The Privacy Act of 1974 attempted to define individual rights and the responsibilities of the agencies which have access to such sensitive information, like the

Internal Revenue Services. However, the U.S. has demonstrated a marked reluctance to enact legislation in this area. As the technologies converge large amounts of personal data are being accumulated by third parties, largely commercial interests whose use of such data remains unsupervised.

If the new U.S. legislation realizes its potential the telephone companies, the cable television operators and the on-line services, among others, could trespass on privacy in an unprecedented way. Each plans to provide consumer services, carrying information to and from the home.

The new Act addresses the issue but its guidelines are far from comprehensive and, in some respects, considered vague.

> Privacy requirements for telecommunications carriers--Except as required by law or with the approval of the customer, a telecommunications carrier that receives or obtains customer proprietary network information by virtue of its provision of a telecommunications service shall only use, disclose, or permit access to individually identifiable customer proprietary network information in its provision of a) the telecommunications service from which such information is derived, or b)services necessary to, or used in, the provision of such telecommunications service, including the publishing of directories. (7)

The growth of the U.S. on-line consumer services industry is matched only by the volume and type of data which it has been accumulating. Every transaction leaves a footprint which describes habits, preferences and particularly, private appetites. The parallel growth of U.S. consumer on-line services in Europe has raised even greater fears given the absence of laws in the United States governing data protection.

The European Commission is unlikely to follow this American lead. It has already issued a directive on personal data protection.

> If each Member State had its own set of rules on data protection, the cross-border provision of services, notably over the information superhighways, would be virtually impossible. The Directive establishes a clear and stable regulatory framework necessary to guarantee free movement of personal data, while leaving individual EU countries room for maneuver in the way the Directive is implemented. . . . The legislative text narrows the divergence's between national data protection laws to the extent necessary to remove obstacles to the free movement of personal data within the EU. . . . In order to prevent abuses of personal data processing and to ensure that data subjects are informed about processing operations, the Directive lays down common rules to be observed by those who collect, hold or transmit personal data as part of their economic or administrative activities or in the course of the activities of their association.(8)

In Europe the study which had looked at devising a strategy for merging the continent's telecommunications also addressed the issue of privacy and data protection. Europe and the Global Information Society said that a quick policy was needed since "without the legal security of a Union-wide approach, lack of consumer confidence would undermine the rapid development of the Information Society" (9).

The U.S. will be under pressure from Europe to pass data protection legislation. It could be that Europe will prevent the transfer of data to countries where it does not exist.

Content Regulation

The new U.S. telecommunications legislation contains provisions to tackle obscene and indecent content. Accompanying legislation, the Communications Decency Act of

1996, modernizes the protections of the 1934 Act against obscene, lewd, indecent, and harassing use of a telephone and increases the penalties for misuse. The new law defines indecency as "any comment, request, suggestion, proposal, image, or other communication that, in context, depicts or describes, in terms patently offensive as measured by contemporary community standards, sexual or excretory activities or organs"(10).

The U.S. legislative measures were in response to the use of the Internet and on-line services for publishing pornographic material. In September 1995, the Justice Department disclosed the search of 125 homes and offices during an investigation into child pornography involving users of America OnLine. A day earlier the Secret Service had arrested six people suspected of "computer hacking" and disclosed the sequestration of 30 computers (see Chapter 3).

But the Act has already been challenged in the U.S. The Electronic Privacy Information Center with the American Civil Liberties Union and 18 other organizations have challenged the Constitutional legitimacy of the CDA. A federal court in Philadelphia, in February 1996, has put a stay on the legislation until the case can be heard in early April. Whatever the outcome from the court decision, the legislation is likely to be questioned for some time. The challenge is based on the rights of the U.S. First Amendment, establishing freedom of speech and the press (11).

Neither the European Community nor its individual states have such constitutional rights. On the contrary, the Commission is poised to initiate legislation to prevent the transmission of indecent material and is expected to follow that U.S. initiative. The European commitment is based on incidents similar to that of the United States and they have provoked the Commission into considering legislation.

> A crackdown by German authorities on pornography and Nazi propaganda on the Internet is a sign of growing alarm among governments at the uglier side of the worldwide computer network. . . . Germany widened its investigation of on-line services last week to include America Online (AOL), the world's biggest on-line network, to determine whether such services could be held responsible for the material carried on their networks. . . . Prosecutors are also investigating CompuServe, the H.&.R Block company, and T -Online, the on-line service of telecommunications giant Deutsche Telekom, and they have contacted the Deutsche Forschungsnetz, the national scientific research network. . . German Research and Technology Minister Juergen Ruettgers said last week that Bonn respected free speech but must also do more to regulate the Internet. (12)

In this area, the European legislation is likely to mirror the U.S. legislation.

Future Areas of Research

The new era of telecommunications in Europe and the United States is likely to provide many opportunities for further analytical research. Areas that seem particularly important are listed below.

Mergers and Diversity?

Multimedia mergers in the United States, prior to the passage of the new U.S. telecommunications legislation became commonplace. Most were multinational partnerships, all formed in the name of expediency and diversity. How successful have they been and have they really provided opportunity for diversity, particularly among the 15 member states of the European Community whose cultures are in danger of being immersed in an anodyne international culture?

Commercialization of the Internet, Subtle Regulation?

The new U.S. telecommunications legislation contains a political commitment to support the Internet. "It is the policy of the United States. . . to promote the continued development of the Internet and other interactive computer services and other interactive media" (3). Yet the government has withdrawn its subsidy of the U.S. Internet backbone, the NSFNET and has determined that the commercial sector drive the network. The international partnerships offering these links are approved by the FCC in the United States and the European Commission in Europe, both empowered to demand conditions from the operators. Is this regulation by any other name?

New U.S. Regulatory Structure; Does It Work?

Part of the ethos behind the new U.S. telecommunications legislation was to dismantle the regulatory framework created in the wake of the divestiture of AT&T which was considered to be an obstacle to innovation. Has innovation flourished and to whose benefit?

The New U.S. Rules. Do They Work?

According to the legal group Wiley, Rein & Fielding, the U.S. legislation requires 70 FCC proceedings or actions. They include twelve on the RBOCs entry into new business, five on interconnection requirements, nine on universal service, fifteen other regulations for developing competitive markets, seven on cable television, nine on broadcast, five on content regulations, and eight on miscellaneous issues (13). Most will be published before August 1996. How effective will they prove to be?

Universal Service and the Information Highway?

Despite the political promise, have the poor, the uneducated, the ethnic minorities and women been left behind in the Information Age?

The Need for a European State Regulator?

France and Germany appear to favor the British approach of creating their own indigenous structure. The European Commission seems fearful that deadlines will not be met unless a European regulatory body exists. It may propose that its own telecommunications directorate act as regulator for the continent. That is likely to meet with substantial opposition.

European Commission's Target Dates for Liberalization? Will They Be Met?

The European Commission has set January 1998 as the deadline for the liberalization of telephony and cable television with extensions already awarded Portugal, Ireland, Spain and Greece. Will the targets be met and competition introduced in the sectors as expected? But, more importantly, if the targets are not met, why?

Summary

A new era of telecommunications is evident in 1996, one more complex and more international in profile. The U.S., as the biggest and most liberal telecommunications market in the world, seems to be setting the pace ensuring that competition will drive its industry. However, the new U.S. legislation is accompanied by a host of new problems - like security, privacy and content. How the U.S. tackles them will be scrutinized by those following similar legislative paths.

Very close behind the U.S. is Europe, determined to use telecommunications not just as an economic engine but as a platform for social cohesion. It has already emulated much of U.S. policy by embracing competition. But there is likely to be disharmony between the two continents in areas where Europe has a substantial social commitment. In 1996, that appears to be evident in legislation governing data protection.

However, despite following different routes, both U.S. and Europe are converging on the same goal--in the U.S. it is termed the Information Superhighway and in Europe the Information Society.

Notes

1. "U.S. proposes to further open telecom market to foreign investors." Bureau of National Affairs (BNA) Management Briefing 30 Aug. 1995. n.pag. Online. Nexis. 10 Jan. 1996.

2. McEvoy, Janet. "EU parliament urges tougher limits on U.S. tv shows." Reuter Business Report 14 Feb. 1996. n.pag. Online. Nexis. 10 Jan. 1996.

3. Telecommunications Act of 1996 - As signed, 8 Feb. 1996. n. pag. Online. WWW. http://www.bell.com/legislation/s652final.html. 8 Feb. 1996.

4. European Commission. Ensuring Universal Service and Interoperability through application of the principles of open network provision (ONP). Brussels:EEC, 19 July, 1995. n. pag. Online. WWW. http://www.cec.lu/en/comm/dg22/dg22.html. 20 Sep. 1995.

5. Telecommunications Act of 1996 n. pag.

6. Dahl, Fredrik. “EU Competition Policy gets tougher.” Reuter European Community Report 13 Nov. 1995. n.pag. Online. Nexis. 10 Jan. 1996.

7. Telecommunications Act of 1996 n. pag.

8. European Economic Community, “Developing the legislative framework for the information society.” M2 Presswire 6 Oct. 1995. n.pag. Online. Nexis. 10 Jan. 1996.

9. “Developing the legislative framework for the information society.” n. pag.

10. Full text of Telecommunications Act, 1996 and Communications Decency Act, 1996 . n. pag. Online. WWW. http://commlaw.com. 8 Feb. 1996.

11. Legal challenge to Internet Censorship. n. pag. Online. WWW. http://www.epic.org/free_speech/censorship/lawsuit/. 28 Feb. 1996.

12. Boston, William. “Growing alarm at Internet pornography.” The Herald (Glasgow) 5 Feb.1996: 8. Online. Nexis. 5 Jan. 1996.

13. BNA Management Briefing 12 Feb. 1996. n.pag. Online. Nexis. 15 Feb. 1996.

Table 5-1. Comparison of U.S. and European Telecommunications Policies and Models.

Sector/ structure	USA	Europe	Expectation
Cable television 1984-	Cable Act 1984 created unregulated franchises. Legislation 1992 allowed local authority and FCC to regulate basic cable. 1996 legislation deregulates.	U.K., cable grows late 1980s after investment from foreign companies, largely American Bells. Benelux countries high penetration but little else in Europe.	Cable television expected to expand by 40 percent to 56 million European subscribers by 2005. Second tier of local telephony. European Commission directs open competition by 1998. *U.S. model of competition in cable and the sector as second tier for local telephony.*
Telephone 1984-	Open competition in long distance, post 1984. Local telephony largely monopoly of the Bell companies, although 1400 independents. 1996 legislation allows competition in all sectors.	U.K., long distance competitor Mercury protected from 1984-1991. Then, utilities licensed. Cable television second tier of local telephony late 1980s. Neither sector open in the rest of Europe, except Sweden and Benelux.	European Commission target 1998 for full competition. Telephony in 1996 still dominated by the government owned Postal, Telephone and Telegraph (PTTs) agencies. *U.S. model to introduce open competition and private capital.*
Regulatory structure 1984-1996	FCC, DC District Court, Court of Appeals, Justice Dept. and State Regulatory Commissioners. Principal purpose to regulate Bells.	U.K., Office of Telecommunications (Oftel) created 1984. Government is regulator in remainder of mainland Europe.	European Commission policy to remove telecommunications from the public sector. *U.S./ U.K. model of private capital.*

Table 5-1 (contd)

Sector/ structure	USA	Europe	Expectation
Enabling legislation for the 1980s policy.	Sherman Antitrust Act, 1890; Communications Act, 1934; Tunney Act, 1974.	British Telecom Act, 1984; Single European Act, 1986.	Commitment to merge 15 European member states and dismantle trade barriers. *U.S. model with full competition and injection of private capital, similar to U.K. model.*
Goals of the 1980s.	Divestiture of AT&T, 1982-4. Opened long distance to full competition and creating seven Bell companies to run local telephony.	U.K., the privatization of British Telecom, 1984. Rest of European telephone still in public sphere owned by government.	European Commission adopts British strategy - telecommunications out of the public sphere by 1998. *U.S. and U.K. model with injection of private capital.*
Regulatory structure 1996-	Telecommunications legislation of 1996 abolished structure since 1984 and returned full control to the FCC as the principal regulator. The U.S. courts will still play a part.	1996, France and Germany contemplate creating new regulatory frameworks in parallel with their plans to privatize telecommunications.	French and German model will be based on U.K.'s Oftel. European Commission prefers regulatory control for all member states to reside with it, not dissimilar to the FCC. *Either U.S. model of the FCC (European Commission preference) or U.K. Oftel.*

Table 5-1 (contd)

Sector/ structure	USA	Europe	Expectation
Enabling legislation for the 1990s policy.	Telecommunications legislation 1996 allows full competition in all sectors with minimal regulation.	Maastricht Treaty merges Europe, 1992. Commission outlines deadline of 1998 for full competition and privatization, similar to U.K.	France and Germany to lead privatization in 1996/7. *U.S. and U.K. models of private capital injection and full competition.*
Goals for 1990s.	Creation of an infrastructure for an information based economy, termed *U.S. Information Superhighway.*	Creation of an infrastructure for an information based economy, termed *Europe's Information Society.*	European full competition by 1998. Waivers given Portugal, Spain, Greece and Ireland. *U.S. model, namely full competition.*
Internet	1982, Defense Advanced Research Project (ARPANET) to exchange data. 1984, the National Science Foundation Network (NSFNET), created as backbone of the U.S. Internet. Annual government funding of U.S.$20 million withdrawn 1995. The network to be run by the commercial sector.	Eunet, backbone of European Internet established in early 1980s, for exchange of research data.	Internet, only trans-European network. European Commission considers telecommunications a means of social cohesion. Internet likely to remain publicly funded. *European model with Internet supported from public purse.*

Table 5-1 (contd)

Sector/ structure	USA	Europe	Expectation
Multimedia, multinational mergers.	Approved by the FCC in the U.S.	Approved by European Commission for the continent. Example, MCI, British Telecom, France Telecom and Deutsche Telekom.	Conditions imposed on these mergers by the European Commission likely to be more stringent than the U.S. *European model demanding open competition--no exclusive partnerships.*
Funding Universal Service.	Prior to 1996, funds provided by long distance carriers. Post 1996, all telecom operators to contribute according to rules to be established by the FCC.	U.K., British Telecom major carrier, has Universal Service responsibility. Other carriers to pay interconnection. In other member states states, (except Sweden), telecom still owned by government.	European Commission wants all operators to contribute to a fund and those interconnecting with the principal operator to pay fee. *This has elements of U.S. and U.K. model.*
Privacy	Privacy Act, 1974, only legislation addressing the issue. Protects government controlled data. Private sector still unbridled.	European legislation in the making for data protection. Input from all member states.	European Commission insists that all member states comply and and countries trading with them have similar data protection standards. Could be a source of conflict with the U.S. *European model with prominent social element.*

Table 5-1 (contd)

Sector/ structure	USA	Europe	Expectation
Content legislation, to prevent transmission of lewd/ obscene material over telecommunications networks.	Communications Decency Act, 1996, accompanying legislation to the telecommunications act. Already challenged in U.S. court as breach of First Amendment Constitutional Right to publish.	European Commission drafting legislation to prevent transmission of obscene material. Europeans do not have a Constitution nor similar rights to publish.	Europe and U.S. have reacted to increasing use of networks to publish pornography. European Commission expected to be unchallenged in legislation to curb obscene material transmissions. *European model without the legal constraints of U.S. model.*

APPENDIX

EXAMPLES OF MULTIMEDIA MERGERS

Altanta Journal & Constitution revamps its audiotex service, offering Yellow Pages and newspaper classified, with BellSouth.

America Online reaches agreements with General Media to devise an interactive service for articles from Omni, the science fiction magazine, and Compute its sister publication.

America Online agrees with Sharp to include an edition of their service on Sharp's new PT-9000, Personal Information Assistant. This follows agreement with Tandy and Casio and with Apple for its similar technology, the Newton.

America Online teams up with Tandy, Casio and GeoWorks Software to develop its own consumer information receiver.

America Online concludes deal with The Reference Press to offer access to Hoover's Handbook database of public and private company profiles.

America Online to be installed by Compaq and Compudyne on all personal computers. IBM, Tandy, Apple, AST, NEC and Acer already install the software.

Apple signs a licensing agreement with America Online. Subsequently Applelink offers Ziffnet (information on personal computers), news and reference services like Dow Jones, Tribune Media and Groliers' Encyclopedia.

Apple Online Services, provider of AppleLink to 52 countries, awards contracts to Sprint Corporation and BT North America to provide networks for the group's future North America online services.

AT&T, TCI and U.S. West announce cooperative deal for developing video on demand.

AT&T joins in partnership with MTV's parent Viacom.

AT&T, California Medical Association and Commnet (San Francisco based networking company) launch network linking physicians to hospitals, medical insurers and pharmacies.

Bellcore, the research group owned by the Baby Bells, New Jersey Bell and M.A.I.N. (a consortium of 32 Morris County, New Jersey and academic libraries) have agreed to develop MORENET (Morris Research and Education Network), giving the public online access to Internet through the public library system.

Cox Newspapers and Prodigy agree to launch nationwide interactive network. Atlanta based company disclosed that its newspapers in Atlanta and West Palm Beach, Florida will begin the service. The group also owns newspapers in Texas, Ohio, Arizona and Colorado which are expected to join the project.

Gannett newspapers in Florida and suburbs of New York City strike a deal to carry news on CompuServe.

H&R Block, owner of CompuServe buys Meca Software, Connecticut U.S.$44.2 million.

Harper Collins, launches Harper Collins Online, an electronic book information service on CompuServe.

Macy's department store chain agrees deal with cable television giant Cablevision Systems to develop new remote shopping system.

Miami Herald pioneers audio enquiry service, Autoline Service, for used cars sales, linked to an electronic database. The Oregonian, Milwaukee Sentinel, Philadelphia Inquirer and the Boston Herald license the Miami service.

Micrografx, the Texas based graphics company, develop national electronic system for tracing missing children. Available through online services like CompuServe.

Microsoft, Tele-Communications Inc. and Time Warner discussing developing a system for transmitting interactive programming.

Microsoft chairman Bill Gates predicts launching a product to rival CompuServe, Prodigy and America Online.

News Corporation, owner of Fox Television, The Times (London), Harper Collins, TV Guide and a stable of other publications, purchase the 12 year-old Delphi Internet Services, formerly General Videotex Corporation, with fewer than 100,000 subscribers.(44) Joint development work will be done by News Corporation's News Electronic Data Inc. (NED) and Delphi.

PC Financial Network. through Prodigy, claims to have signed up 100,000 customers and become the largest online discount broker in the USA.

Prodigy concludes deals with 15 cable television companies to participate in a new service, allowing Prodigy members to take part in viewer polls.

Tele-Communications Inc. (TCI), the largest cable television company invests U.S.$100 million in Carolco Pictures.

Tele-Communications Inc. (TCI) to launch pilot project with Pacific Gas & Electric Co. and Microsoft. Two hundred homes in San Francisco, with the aid of fiber optics, will merge utilities, cable television and telephone services.

The Chicago Tribune offers new newspaper service, Chicago Online, using the system of America Online in which it has stake.

Time Warner and partner U.S. West (spent U.S.$2.5 billion for 12.5 percent stake) plans superhighway to 4,000 subscribers in Orlando, Florida; system to offer 'News on demand' service.

Times-Mirror and Prodigy agree on electronic publishing service. The Los Angeles Times, Newsday and New York Newsday expected to initiate the service to be followed by the Baltimore Sun, Hartford Courant, Stamford Advocate, Morning Call and Greenwich Time.

U.S. West, in partnership with France Telecom, use Minitel technology to devise electronic directory service for the Twin Cities, with information on a million households, businesses and government agencies. System will carry telephone listings and advertising.

BIBLIOGRAPHY

"Ambassador Diana Lady Dougan talks policy." Network World 1 May 1989: S26. Online. Nexis. 11 Feb. 1996.

"AT&T chairman calls on world's information industry to deliver benefits of information technology to developing and industrial nations." Business Wire 7 Oct. 1991. n. pag. Online. Nexis. 11 Feb. 1996.

"Bill would ensure law enforcement is able to tap wires." Wall Street Journal. 30 Sep. 1994: B5. Online. Nexis. 4 Oct. 1995.

"Business view Flextech's boat comes in for Scottish Television." The Scotsman 1 Sep.1995: 22. Online. Nexis. 30 Sep. 1995.

"Cable besieged." Washington Post 14 Feb.1992: A24. Online. Nexis. 10 Sep. 1995.

"Cable hopes deferred." Financial Times 1 Mar. 1985: 12. Online. Nexis. 10 Jan. 1996.

"FCC cable rate survey shows decline in rates for consumers." Daily Report for Executives 15 July 1994: A134. Online. Nexis. 10 Sep. 1995.

"For Cable and Wireless, gains and exit date." New York Times 17 Nov.1995: D18. Online. Nexis. 16 Jan. 1996.

"Germany licenses telecom firm's alternative broadband technology." Bureau of National Affairs (BNA) International Business & Finance Daily 30 Nov.1995. Online. Nexis. 12 Dec. 1995.

"House of Lords rules in Mercury's favour in dispute with regulator." Computergram International 10 Feb.1995. n. pag. Online. Nexis. 10 Jan. 1996.

"Inside AT&T: regulatory developments." Inside Telecom 16 Jan. 1995. n. pag. Online. Nexis. 20 Jan. 1995.

"Inside BT: concert virtual network service." Inside Telcom 13 Feb. 1995. n. pag. Online. Nexis. 10 Dec. 1995.

"Keeping your private life private: information technology threatens privacy." USA Today 27 Oct. 1992: 5B. Online. Nexis. 10 Sep. 1995.

"Localize the superhighway." Washington Post 18 Sept. 1994: C8. Online. Nexis. 10 Feb.1996.

"MEASAT and PanAmSat dual launch for Hughes." Business Wire 9 Jan.1996. n. pag. Online. Nexis. 15 Feb. 1996.

"Microsoft taps U.K. market for interactive services trial." European Media Business & Finance 20 Nov. 1995 n. pag. Online. Nexis. 30 Nov. 1995.

"National Cable TV Association statement on GAO report." U.S. Newswire 18 July 1991. n. pag. Online. Nexis. 20 Sep. 1995.

"NTIA study sees info age 'have-nots' as poor, young, uneducated." Telco Business Report 14 Aug. 1995. n. pag. Online. Nexis. 10 Feb.1996.

"On consent decrees; Dole bill set for delivery early this week as RHCs prepare strategy." Communications Daily 9 Jun.1986: 1. Online. Nexis. 8 Jan. 1996.

"Riding the information highway." Newsday Special Reprint. July 1993

"Study finds broad student use of cable in the classroom." Educational Marketer 11 Sept. 1995. n. pag. Online. Nexis. 10 Feb.1996.

"Telecommunications future: Arizona in the dust." Phoenix Gazette 11 July 1994:B4. Online. Nexis. 10 Feb.1996.

"Telecoms." Network Briefing 17 Nov. 1995. n. pag. Online. Nexis. 20 Nov.1995.

"TF1/France TV join forces to develop digital satellite." Tech Europe 1 Dec.1995: 110. Online. Nexis. 8 Jan. 1996.

"The case for Jeffersonian information policy." Wired . n. pag. Online. America Online. 27 Sep.1994.

"The revolution begins, at last." Economist 30 Sept. 1995: 15. Online. Nexis. 11 Feb. 1996.

"Towards a single 'phone market." Financial Times 22 Nov. 1991: 18. Online. Nexis. 10 Jan. 1995.

"Turner, BellSouth using Prodigy for marketing." Atlanta Journal and Constitution. 4 Nov. 1993: 2C. Online. Nexis. 10 Feb.1996.

"U.S. proposes to further open telecom market to foreign investors." Bureau of National Affairs (BNA) Management Briefing 30 Aug. 1995. n.pag. Online. Nexis. 10 Jan. 1996.

"U.S. West plan to up rates on data service protested." Denver Post 9 Jan.1996: D2. Online. Nexis. 10 Jan. 1996.

"Welcome to the world." Economist 30 Sept. 1995: S25. Online. Nexis. 11 Feb. 1996.

Ablett, Susan, and Johnson, Graham. Strategies for Global Networks, European Telecommunications. London: Analysys, 1991.

Agence France Presse (Paris/London). 15 Aug. 1995: Financial. Online. Nexis. 16 Aug. 1995.

Allen, Robert E. Press Conference, Telecom '91. Geneva/ New Jersey: AT&T, 7 Oct. 1991.

Analysys. European Telecommunications, Standards, ONP-Keys to the Open Market, Players in the Game. London: Analysys, 1991.

Applebone, Peter. "Computer idea gets mixed response." New York Times 25 Jan. 1996: A17. Online. Nexis. 10 Feb.1996.

Arndt, Michael. "Technological torrent shorts FCC circuitry." Chicago Tribune 19 June 1994: Business 1C. Online. Nexis. 4 Oct. 1995.

Auerbach, Jon. "AT&T cuts latest move in deregulation drive; companies gearing up for heightened competition." Boston Globe 5 Jan. 1996: E29. Online. Nexis. 10 Feb.1996.

Bannister, Nicholas. "The brawl that was waiting to happen." The Guardian 28 Nov.1995: 20. Online. Nexis. 30 Nov. 1995.

Beesley, Michael. The Future of Telecommunications. London: Institute of Economic Affairs, 1989.

BNA Management Briefing 12 Feb. 1996. n.pag. Online. Nexis. 15 Feb. 1996.

Bogler, Daniel. "Money-go-round: attractive number despite the gloom shares for income." Daily Telegraph 3 June, 1995: 12. Online. Nexis. 12 Jan. 1996.

Boston, William. "Growing alarm at Internet pornography." The Herald (Glasgow) 5 Feb.1996: 8. Online. Nexis. 5 Jan. 1996.

Bradford, Peter. New York Public Service Commission. Testimony before U.S. Senate Sub-committee on Antitrust, Monopolies and Business Rights, On Lifting Manufacturing Sanctions. 21 May 1991.

Brittan, Leon. Communication to Commission, Draft Communication on 1992 Review and Telecommunications Tariffs. Brussels: EEC, May 1992.

Brittan, Leon. Centre for European Policy Studies (CEPS), Competition Policy and Post and Telecommunications. Brussels: EEC/CEPS, 19 May 1992.

Bruce, Robert R., Cunard, Jeffrey P., and Director, Mark D. The Telecom Mosaic. London: Butterworths, 1988.

Bruce, Robert R., Cunard, Jeffrey P., and Director, Mark D. From Telecommunications to Electronic Services. New York/London: Butterworth, 1986.

Burgess, John. "The AT&T breakup, five years into the new age of telephones." Washington Post 28 Dec.1988: PA1. Online. Nexis. 10 Sep. 1995.

Cable Communications Policy Act, Section 631. 30 Oct. 1984.

Cable Television Consumer Protection and Competition Act of 1992. n. pag. Online. WWW. http://www.fcc.gov/csb/html. 10 Sep. 1995.

Canadian Government. Statement, G7 Conference. Brussels, Feb.1995. n. pag. Online. Nexis. 10 Feb. 1996.

Cane, Alan. "Clash of the telecoms titans: regulators in Europe and the U.S. oppose the creation of a Franco-German alliance." Financial Times 2 Oct. 1995: 21. Online. Nexis. 6 Oct. 1995.

Carsberg, Bryan. Office of Telecommunications (Oftel). Competition and Choice: Telecommunications Policy for the 1990s. London: Oftel, 5 March 1991.

Carter, Bill. "Telecommunications bill at a glance." New York Times News Service 2 Feb.1996. n. pag. Online. Nexis. 3 Feb. 1996.

Cole, Steve. The Deal of the Century, The Breakup of AT&T. New York: Touchstone, 1986.

Colombo, Umberto. Managing Technological Change Scenarios for Change in Europe, International Herald Tribune/J. Walter Thompson Conference, Lifestyle 2000. Rome: JWT, 2 Nov. 1989.

Communications Daily 1 Dec.1986: 10.n. pag. Online. Nexis. 20 Oct. 1995.

Cooper, Charlotte. "Focus-Berlusconi completes phase two of media sale." Money Report Reuters 29 Dec.1995. n. pag. Online. Nexis. 8 Jan. 1996.

Coopers & Lybrand. Communications Renaissance, IT Survey. Brussels: Coopers & Lybrand, 1995. n. pag. Online. WWW. http://www.colybrand.com/. 20 Nov. 1995.

Coopers & Lybrand. Communication Renaissance-European Survey on the Information Superhighway and Multimedia. Dec.1994. n. pag. Online. WWW. http://www.colybrand.com/. 15 Jun. 1995.

Corbin, Lisa. "Information technology, speeding up the data superhighway, government paves the way for the private sector." Government Executive Feb. 1995. n. pag. Online. Nexis. 10 Feb.1996.

Crawley, Richard. European Economic Community. European Commission, Tackling European Tariffs, PNE Tariffs. Brussels: EEC, Apr. 1992.

Cronin, Mary. J. Doing Business on the Internet. New York:Van Nostrand Reinhold, 1994. n. pag. Online. WWW. http://www.novalink.com/cronin/biomjc.html. 20 Mar. 1995.

Dahl, Fredrik. "EU competition policy gets tougher." Reuter European Community Report 13 Nov. 1995. n.pag. Online. Nexis. 10 Jan. 1996.

Daley, Steve. "Plan that wired rural U.S. facing budget ax." Chicago Tribune 11 Apr. 1993: 1. Online. Nexis. 10 Feb.1996.

Danforth, Jack. "We have the worst of both worlds, Sen. Danforth writes." Telecommunications Policy Briefing , Roll Call, No:39. 19 Apr. 1992. n. pag. Online. Nexis. 4 Oct. 1995.

Datapro Research. Telecommunications in Europe. London: McGraw-Hill, June 1990.

Dekker, Wisse. Will Europe Recover the Leadership in Technology?-A Challenge. London: PA Technology, 19 Feb. 1987.

Dern, Daniel. P. Meeting the Challenges of Business and the Public End-User Communities on the Internet: What They Want, What They Need, What They're Doing. n. pag. Online. WWW. http://www.dern.com. 10 Jan.1996.

Dixon, Bill. Summary of Maastricht Treaty, European Community history. n. pag. Online. WWW. http://ccme mac4.bsd.uchicago.edu/DSALit/Maastricht.html. 20 Oct. 1995.

Dordick, Herbert S., and Fife, Marlyn Diane. Universal Service in Post-Divestiture USA. London: Butterworth-Heinemann, 1991.

Dyson, K., Humphreys, P., Negrine, R., and Simon, J.P. Broadcasting and New Media Policies in Western Europe London: Routledge, 1988.

Edmondson, Gail. "Who's running this company." Business Week 25 Sep. 1995: 25. Online. Nexis. 30 Sep. 1995.

EDS Management Consulting Services. PCs: Becoming Everyday Appliances. Washington: EDS, Aug. 1995. n pag.

Edupage. n. pag. Online. Internet. 22 Dec.1995.

Electronic Privacy Information Center, comp.society.privacy, 2 Oct. 1994. n. pag. Online. Internet. 10 Nov. 1995.

Emling, Shelley. "How much do providers know about you? Computer services have compiled an enormous amount of information on subscribers." San Diego Union-Tribune 30 Aug. 1994:16. Online. Nexis. 10 Sep. 1995.

Ergas, Henry, and Paterson, Paul. Telecommunications Policy. London: Butterworth-Heinemann, Feb. 1991.

European Commission's Directorate General on Information, Communication, Culture and Audiovisual. IT Survey. Brussels: EEC, 1995. n. pag. Online. WWW. http://meritbbs.rulimburg.nl/hleg.html. 15 Nov. 1995.

European Commission. Ensuring Universal Service and Interoperability through Application of the Principles of Open Network Provision (ONP). Brussels:EEC, 19 July, 1995. n. pag. Online. WWW. http://www.cec.lu/en/comm/dg22/dg22.html. 20 Sep. 1995.

European Economic Community, "Developing the legislative framework for the information society." M2 Presswire 6 Oct. 1995. n.pag. Online. Nexis. 10 Jan. 1996.

European Economic Community. 1992 Review of the Situation in the Telecommunications Services Sector. Brussels: EEC, 20 May 1992.

European Economic Community. Europe's way to the Information Society: An Action Plan. Brussels: EEC, July 1994. n. pag. Online. WWW. http://www2.echo.lu/eudocs/en/com-asc.html. 14 Jan. 1996.

European Economic Community. Europe and the Global Information Society. Brussels, EEC, 1995. n. pag. Online. WWW. http://www.earn.net/EC/report.html. 12 Jan. 1996.

European Economic Community. European Commission's Communication Industrial Policy in an Open and Competitive Environment (Summary). Guidelines for a Community Approach. Brussels: EEC, 17 Apr. 1991.

European Economic Community. Green Paper, On the Development of the Common Market for Telecommunications Services and Equipment, Summary Report. Brussels: EEC, 1987. n. pag. Online. WWW. http://www.polity.org.za/govdocs/green_papers/telecomms.html. 12 Jan. 1996.

European Economic Community. Growth, Competitiveness, Employment: The Challenges and Ways Forward into the 21st Century. Brussels: EEC, 1993. n. pag. Online. WWW. http://www.echo.lu/eudocs/en/wpaper/contents.html. 10 Sep. 1995.

European Economic Community. Perspectives on Advanced Communications for Europe (PACE), Volume 1. Brussels: EEC, 1989.

European Economic Community. Perspectives on Advanced Communications for Europe (PACE) , Commission of the European Communities, Volume VII. Brussels: EEC, Feb.1991.

European Economic Community. Proposal for a Council Decision Setting up a Programme for an Information Services Market. Brussels: EEC, 23 Jan.1991.

European Economic Community. Report on the State of Implementation of Green Paper on the Development of the Common Market for Telecommunications Services and Equipment. Brussels: EEC, July 1991. n. pag. Online. WWW. http://www.polity.org.za/govdocs/green_papers/telecomms.html. 10 Dec. 1995.

European Economic Community. The European Information Society Moves Towards the Future, press release. Brussels: EEC, 28 Feb. 1995. n. pag. Online. WWW. http://www.cec.lu/en/comm/dg22/dg22.html. 1 Mar.1995

European Economic Community. The European Union and World Trade. Brussels: EEC, 1995.

European Economic Community. Submission to World Trade Organisation. Geneva: WTO, 7 Nov. 1995.

European Round Table of Industrialists. Missing Networks A European Challenge, Proposals for the Renewal of Europe's Infrastructure. Brussels:ERTI, 1991

European Round Table of Industrialists. Clearing the Lines, A Users View on Business Communications in Europe. Brussels: ERTI, Apr. 1987.

European Round Table of Industrialists. Reshaping Europe. Brussels: ERTI, Sept.1991.

FCC Week Volume 10. No:23. 10 June 1991.

FCC Week Volume 10. No:7. 25 Feb. 1991.

Federal Communications Commission. ITT Worldcom, RCA, Western International v Consortium Communications International. Washington: FCC 12 Feb. 1980.

Federal Communications Commission. Common Carrier Bureau, Industrial Analysis Division. Trends in the International Communications Industry, 1975-90. Washington: FCC, 4 Oct. 1991.

Federal Communications Commission. Final Report on Cable Rate Survey. Washington: FCC, 15 July 1994.

Federal Communications Commission. Overseas Communications Services. Washington: FCC, 22 Dec. 1982.

Federal Communications Commission. Regulation of International Accounting Rates. Washington : FCC, 23 May 1991.

Flint, Jow. "Cable rate hikes not excessive, study claims; industry-backed study says once-regulated prices have simply caught up with cpi; consumer price index." Broadcasting 13 Apr.1992: 39. Online. Nexis. 8 Sep. 1995.

Full text of Telecommunications Act, 1996 and Communications Decency Act, 1996 . n. pag. Online. WWW. http://commlaw.com. 8 Feb. 1996.

General Accounting Office. Information Superhighway - Issues affecting development. Washington: GAO, 30 Sept. 1994. n. pag. Online. Nexis. 10 Feb.1996.

General Accounting Office. Survey of Cable Television Rates and Services. Washington: GAO, 1991.

General Accounting Office. Telephone Communications, Issues Affecting Rural Telephone Service. Washington: GAO, Mar. 1987. Online. Nexis. 10 Feb.1996.

Gore, Al. International Telecommunication Union, World Telecommunication Development Conference. Buenos Aires/Washington: White House, 21 Mar. 1994. n. pag. Online. Internet. 10 Sep. 1995.

Gore, Al. ITU World Telecommunications Development Conference. Washington: White House, 28 Mar. 1994. n. pag. Online. Nexis. 10 Feb. 1996.

Grant, Richard. "Labour deal to hit 100,000 jobs." Mail on Sunday 12 Nov. 1995: 1. Online. Nexis. 20 Nov. 1995.

Greathouse, Elizabeth. Spirit of Cooperation Prevails, G7. Feb. 28, 1995. n. pag. Online. WWW. http://www.ibm.com/Sponsor/g7live/index.html. 1 Mar. 1995.

Green, Noah. "Weaning the net: the feds hand cyberspace to the private sector." Village Voice 11 July 1995: 41. Online. Nexis. 16 Feb. 1996.

Greene Harold H. United States of America v American Telephone and Telegraph; Western Electric Company, Inc.; And Bell Telephone Laboratories, Inc.; Civil action 74-1698. Washington: DC District Court, 11 Sep.1981.

Greene Harold H. United States of America v Western Electric Inc. et. al., Civil Action 82-0192. Washington: DC District Court, 25 Jul.1991.

Gribben, Roland. "Public's share of BT issue may rise." Daily Telegraph 4 Dec. 1991: 22. Online. Nexis. 14 Jan. 1996.

Gupta, Sunil. What in the World is a Web User. Ann Arbor: University of Michigan Business School, Feb. 1995. n. pag. Online. WWW. http://www-personal.umich.edu/~sgupta/hermes/. 10 Mar. 1995.

Handford, Richard. "Americans in Europe; American telephone companies may be the operators of Europe's largest telephone networks by the end of the century; a fiber optic future." EuroBusiness Sep.1995: 58. Online. Nexis. 20 Nov. 1995.

Hayes, Dawn. "U.S. West makes bid in Italy TV." Bloomberg Business News/ The Phoenix Gazette 12 Sep.1995: B3. Online. Nexis. 30 Sep. 1995.

Heywood, Peter. "Leased-line forecast: deeper price cuts." Data Communications Feb. 1995: 55. Online. Nexis. 11 Feb. 1996.

Hogan & Hartson (Law). European Telecommunications: New Rules on Leased Lines. Brussels/London: H&H, Aug.1992.

Holmes, Bradley. P. United States Efforts to Liberalize, U.S. Experience and Lessons for Abroad, International Communications and Information Policy. Washington: U.S. Department of State, 12 Mar. 1990.

Information Technology Advisory Panel (ITAP). Cable Networks. London:ITAP, 1982.

Interactive Services Association (ISA). Update. Washington: ISA, Sep. 1993: Vol.12 /10.

Interactive Services Association (ISA). Update. Washington: ISA, Aug. 1993: Vol. 12/8.

International Chamber of Commerce. International Telecommunications, Towards Greater Competition in Telecommunications. Paris: ICC, 3/4 Dec. 1991.

International Telecommunications Union (ITU). Tomorrow's ITU: The Challenges of Change. Geneva: ITU, 26 Apr. 1991.

Internet Index. n. pag. Online. WWW. http://www.openmarket.com/info/internet-index. 29 jun. 1995.

Jacobs, Jennifer. “Telecoms sector generates U.S.$1.4 trillion in revenues.” Business Times 4 Oct. 1995:1. Online. Nexis. 14 Feb. 1996.

Kenward, Michael. “Survey of international telecommunications.” Financial Times 3 Oct. 1995:XXV111. Online. Nexis. 11 Feb.1996.

Kimmelman, Gene. Consumer Federation of America. Statement to House Economic and Commercial Subcommittee, on AT&T Consent Decree. Washington: U.S. Congress, 1 Aug.1991.

Kupfer, Andrew. “Information technology/ special report.” Fortune 18 Sep. 1995: 175. Online. Nexis. 10 Oct. 1995.

Legal Challenge to Internet Censorship. n. pag. Online. WWW. http://www.epic.org/free_speech/censorship/lawsuit/. 28 Feb. 1996.

Macdonald, Patrick. “Cable TV’s changing; here’s how and why.” Seattle Times 14 Mar. 1993: A1. Online. Nexis. 20 Nov. 1995.

Mackie-Mason, Jeffrey K., and Varian, Hal R. Pricing the Internet. Ann Arbor: University of Michigan: Apr.1993. n. pag. Online. WWW. http://gopher.econ.lsa.umich.edu/FAQs/FAQsALL.html. 10 Feb. 1995.

Mackie-Mason, Jeffrey K., and Varian, Hal R. Economic Frequently Asked Questions about The Internet. Ann Arbor: University of Michigan. n. pag. Online. WWW. http://www.ipps.lsa.umich.edu/ipps/papers/info-nets/useFAQs/useFAQs.html. 10 Mar. 1995.

Maclachlan, Claudia. "A slow move into brave new world." The National Law Journal 1 May 1995: Pg. A1. Online. Nexis. 9 Dec. 1995.

Maney, Kevin. "Merger mania spreads to Disney World." USA Today 1 Aug. 1995: MONEY1B. Online. Nexis.10 Feb.1996.

Marshall, Tyler. "Old world on brink of a telecom revolution." Los Angeles Times 22 Oct.1995: D1. Online. Nexis. 30 Oct. 1995.

Mathew Horsman. "Soft porn channels planned for cable network." Independent. 29 Aug. 1995: 13. Online. Nexis. 31 Aug. 1995.

McEvoy, Janet. "EU parliament urges tougher limits on U.S. TV shows." Reuter Business Report 14 Feb. 1996. n.pag. Online. Nexis. 10 Jan. 1996.

MDIS, International Telecommunications Intelligence, Minitel, Chichester: MDIS, 1995.

Mendoza, Manuel. "Information superhighway bypasses poor neighborhoods." Dallas Morning News/ Times Union. 24 July 1994: H2. Online. Nexis. 10 Feb.1996.

Montague, Bill, and Fiorini, Phillip. "IRS sneaks a peek/ Privacy abuse 'confirms the worst fear'." USA Today 20 Jul. 1994: 1A. Online. Nexis. 20 Sep. 1995.

Moran, John M. "On-line crime battle boots up officials target scams and porn." Hartford Courant 18 Sep. 1995: A1. Online. Nexis. 10 Feb.1996.
n. pag. Online. Nexis. 11 Feb. 1996.

National Information Infrastructure Task Force, Privacy Working Group, Information Policy Committee. Privacy and the National Information Infrastructure, Principles for providing and using personal information. Washington: NIITF. n. pag. Online. WWW. http://www.eff.org/pub/GII_NII/Govt_docs/. 6 June 1995.

National Telecommunications and Information Administration (NTIA). Testimony before the Federal Communications Commission. Regulation of International Accounting Rates. Washington: NTIA, 12 Oct. 1990.

National Telecommunications and Information Administration. Telecom 2000. Washington: Department of Commerce, Oct. 1988.

National Telecommunications and Information Administration. Telecommunications in the Age of Information. Washington: Department of Commerce, Oct. 1991.

National Telecommunications and Information. Falling Through the Net: A Survey of the 'Have-Nots' in Rural and Urban America. Washington: NTIA, Aug. 1995. n. pag. Online. WWW. http://www.ntia.doc.gov/ntiahome/fallingthru.html: Background. 10 Sep. 1995.

Norton, Rob. “Why federal programs won’t die.” Fortune 21 Aug. 1995. Online. Nexis. 10 Feb.1996.

OECD. Working Party on Telecommunication and Information Services Policies, Draft Agenda of the Third Meeting on International Telecommunication Charging Practices. Geneva: OECD 9 Apr. 1992.

OECD. Working Party on Telecommunication and Information Services Policies, Third Meeting on International Telecommunication Charging Practices Transparency in Accounting Rates. Geneva: OECD, 21 Apr. 1992.

Official Journal of the European Commission. Opinion on the Commission Communication on: Towards Trans-European networks -For Community action programme. Brussels: EEC, 7 Apr. 1992.

Paul, Nora. “Database and bulletin board services: a guide to on-line resources.” Quill. Sep. 1993.

Peacock, Alan. Report of the Committee on Financing the BBC. London: U.K. Government: HMSO, 1986.

Plantain, Amy. “The brave new world of telecommunications.” OECD Observer Dec. 1990: 6. Online. Nexis. 11 Feb. 1996.

Reagan, Ronald. Presidential Determination, PD 85-2, Alternative Satellite Systems. Washington: White House, 28 Nov. 1984.

Reeve, Vicki L. “It's about time how to market to women online.” Multimedia & Videodisc Monitor 1 Dec. 1995.n. pag. Online. Nexis. 10 Jan. 1996.

Reith, John. Broadcasting Over Britain. London: U.K. Government, 1924.

Rotenberg, Marc. “Wiretapping bill: costly and intrusive.” Washington Times 24 Oct. 1994: 20. Online. Nexis. 3 Oct. 1995.

Sanger, Elizabeth, and Quittner, Joshua. “Digital dealing; companies seeking fortunes in tomorrow’s technology race to join forces.” Newsday 19 July 1993 :19. Online. Nexis. 10 Feb.1996.

Santalesa, Rich. “Feeling safe and sound online; Internet security.” Computer Shopper Oct. 1995: 620. Online. Nexis. 10 Jan.1996.

Shetty, Vineeta. “Telecomms hottest properties.” Communications International Apr. 1993: 46. Online. Nexis. 11 Feb. 1996.

Snoddy, Raymond. “Survey of international telecommunications.” Financial Times 3 Oct. 1995: XXXV11. Online. Nexis. 4 Oct. 1995.

Susens, Steven. “Clement hopes to derail rural cable rate increases.” States News Service 1 Aug.1995. n. pag. Online. Nexis. 10 Sep. 1995.

Taylor, Robert. European Telecommunications Policy, Towards 1992 - The Social Issues, European Research Associates conference. Brussels: Blenheim, Apr. 1989: 3.

Telecommunications Act of 1996 - As signed, 8 Feb. 1996. n. pag. Online. WWW. http://www.bell.com/legislation/s652final.html. 8 Feb. 1996.

Temin, Peter, and Galambos, Louis. The Fall of the Bell System. Cambridge: Cambridge University Press, 1987.

Thayer, Richard. AT&T, statement. Washington: AT&T, Sep.1991.

Thierer, Adam D. "Why cable tv rate regulation failed; Cable Consumer Protection and Competition Act of 1992." Consumers' Research Magazine Feb. 1995.

Titch, Steven. "Gore urges ambition for global telecom." Telephony (Thomson U.K.) 28 Mar.1994: 10. Online. Nexis. 11 Feb. 1996.

Traxler, Bob. Testimony before House Science, Space and Technology Committee. Washington: U.S. Congress, 12 Mar. 1992. n. pag. Online. Nexis. 14 Feb. 1996.

Tye, Larry. "EC may force new look at privacy; no private lives." Boston Globe 7 Sep. 1993: 10. Online. Nexis. 6 Oct. 1995.

U.K. Government. Competition and Choice:Telecommunications Policy for the 1990s, A Consultative Document. London: HMSO, Nov. 1990.

U.K. Government. The Development of Cable Systems and Services. London: U.K. Government: HMSO, 1983.

U.S. Census Department. Computer User Survey. Washington: U.S. Census Department, Oct. 1995. n. pag. Online. WWW. http://www.census.gov. 10 Sep. 1995.

U.S. Congress. S.1822, Communications Act of 1994. Washington: U.S. Congress, 3 Feb. 1994. n. pag. Online. WWW. http://www.bell.com. 10 Jan. 1995.

U.S. Congress. Committee on Commerce, Science and Transportation Committee. Report on Telecommunications and Competition and Deregulation Act of 1995, Section 8, Obscenity and other wrongful uses of telecommunications. Washington: U.S. Congress, 23 Mar. 1995.

U.S. Congress. Senate Committee on Commerce, Science and Transportation. Long Range Goals in International Telecommunications and Information, An Outline for United States Policy. Washington: U.S. Congress, 11 Mar. 1983.

U.S. Congress. Committee on Government Operations. International Information Flow: Forging a New Framework .Washington: U.S. Congress, 11 Dec. 1980.

U.S. Congress. Dr. Eric S. Hood, Testimony as Submitted to U.S. House of Representatives Subcommittee on Science of the Committee on Science, Space and Technology. Washington: U.S. Congress, 12 Mar. 1992. n. pag. Online. Internet. 10 Feb. 1995.

U.S. Congress. Report on Pressler Telecommunications Bill, Amendment to the Communications Act 1934. Washington: U.S. Congress, Mar.1995.n. pag. Online. WWW. http://bell.com. 10 Dec. 1995.

U.S. Congress. Senate Subcommittee on Communications, Committee on Commerce, Science and Transportation. International Telecommunications. Washington: U.S. Congress, 28 Feb.1987.

U.S. Department of Commerce. U.S. Industrial Outlook 1991, Telecommunications Services, Section 29. Washington: U.S. Department of Commerce, 1991.

U.S. Department of Commerce. U.S. Industrial Outlook 1992, Telecommunications Services, Section 28. Washington: U.S. Department of Commerce, 1992.

U.S. Government. Department of Justice. Transcript of Consent Decree Press Conference, National Press Club. Washington: DOJ, 8 Jan.1982.

U.S. Government. Triennial Review. Washington: Department of Justice, 1987.

U.S. Government. U.S. Goals and Objectives for the G7 GII Conference. Washington/ Brussels: U.S. Government, 1 Sep. 1994. n. pag. Online. Internet. 20 Mar. 1995.

Ubois, Jeff. "The great communication shake-up; legislation to allow telephone and cable companies to compete." Midrange Systems 30 Sep. 1994.

Ungerer, H., and Costello, N.P. Telecommunications in Europe Brussels: EEC, 1990.

Van Houweling, Douglas E.. Testimony on National Science Foundation Network, before U.S. House of Representatives subcommittee on Science. Washington: U.S. Congress, 12 Mar. 1992. n. pag. Online. Internet. 10 Dec.1995.

Wachman, Richard. "Cable gears up for telecoms big bang." London Evening Standard 19 July 1995: 33. Online. Nexis. 10 Jan. 1996.

WEFA Group. Economic Impact of Deregulating. Burlington, Massachusetts: WEFA, Feb.1995. n. pag. Online. WWW. http://www.cob.ohio-state.edu/dept/fin/resources_data/provider/wefa.htm. 9 Mar. 1995.

Whitten, Patrick. "Does broadband need TV for commercial success? High bandwidth applications." Communications International July, 1991: 4. Online. Nexis. 10 Jan. 1996.

Wilson, Kinsey. "Your life as an open book: digital wizardry that promises to make life more convenient could threaten your privacy." Newsday 21 Jul. 1993: 46. Online. Nexis. 20 Sep. 1995.

Worthington, John R.. Statement MCI. Washington: MCI, Sep.1991.

Ypsilanti, Dimitri. "The cost of calling home." OECD Observer Dec. 1990: 11. Online. Nexis. 11 Feb. 1996.

Zeglis, John D. AT&T submission to U.S. Senate Subcommittee on Communications, Committee on Commerce, Science and Transportation. Washington: U.S. Congress, 25 Apr.1990.

BIOGRAPHICAL SKETCH

William (Bill) Johnstone is British and had more than twenty years of national/ international newspaper/magazine/broadcasting journalism experience before beginning research for the Doctor of Philosophy degree at the University of Florida. Among the major European news organizations for which he worked were the BBC, the Observer and The Times where he was Technology Correspondent for seven years.

He was awarded his first degree, B.Sc (Hons.) in electronics from the University of Paisley, College of Technology, Scotland, in 1972 and his M.A. in journalism from the University of Westminster, London, in 1992.

He has traveled extensively in Europe, the USA and Asia. His professional interests include electronic publishing, electronic journalism, advanced editorial systems, computer assisted reporting, telecommunications, Internet, multimedia and the government policies which influence and regulate the same.

In March 1996, he was honored by the Office of International Studies and Programs at the University of Florida for outstanding academic achievement.

I certify that I have read this study and that in my opinion it conforms to acceptable standards of scholarly presentation and is fully adequate, in scope and quality, as a dissertation for the degree of Doctor of Philosophy.

David H. Ostroff

David Ostroff, Chair
Professor of Journalism and Communications

I certify that I have read this study and that in my opinion it conforms to acceptable standards of scholarly presentation and is fully adequate, in scope and quality, as a dissertation for the degree of Doctor of Philosophy

John Wright
Professor of Journalism and Communications

I certify that I have read this study and that in my opinion it conforms to acceptable standards of scholarly presentation and is fully adequate, in scope and quality, as a dissertation for the degree of Doctor of Philosophy

Kent Lancaster
Professor of Journalism and Communications

I certify that I have read this study and that in my opinion it conforms to acceptable standards of scholarly presentation and is fully adequate, in scope and quality, as a dissertation for the degree of Doctor of Philosophy.

Sebastian Foti
Assistant Professor of
Instruction and Curriculum

I certify that I have read this study and that in my opinion it conforms to acceptable standards of scholarly presentation and is fully adequate, in scope and quality, as a dissertation for the degree of Doctor of Philosophy.

Albert R Math
Albert Matheny
Professor of Political Science

This dissertation was submitted to the Graduate Faculty of the College of Journalism and Communications and to the Graduate School and was accepted as partial fulfillment of the requirements for the degree Doctor of Philosophy.

May 1996

Terry Hynes
Dean, College of Journalism
and Communications

Dean, Graduate School